COMMAND AND GENERAL STAFF SCHOOL

MILITARY REVIEW

December, 1939, Quarterly Review of Military Literature

VOL. XIX, No. 75

HOW UNIT INSTRUCTORS CAN USE THE COMMAND AND GENERAL STAFF SCHOOL MILITARY REVIEW

The following is an extract from a program of conferences prescribed for Chemical Warfare Reserve Officers by Colonel Adelno Gibson, Chemical Warfare, 2d Corps Area:

1. OBJECTIVE GENERAL.

The objective of this series of conferences is:

(a) To increase the general military knowledge of each officer by giving him a comprehensive understanding of current military developments throughout the world, in military literature, organization, equipment, tactics and technique.

(b) To follow the progress of the wars in Europe and Asia for the purpose of gaining lessons applicable to our own National Defense.

(c) To enable each officer to make direct application of the knowledge gained under (a) and (b) above, to his particular function in the Chemical Warfare Reserve.

(d) To afford a means for each Reserve Officer to gain experience in preparing and conducting lectures and conferences on military subjects as an important feature of his military training.

2. SOURCE OF INFORMATION.

The basis of this instruction will be:

(a) FOR GENERAL MILITARY KNOWLEDGE.

The Command and General Staff School Military Review.

This is a Quarterly Review of Military Literature (world-wide in scope) by far the most comprehensive in the English language.

It is edited and published by the Command and General Staff School at Fort Leavenworth, Kansas, at the extraordinarily small annual subscription rate of $1.00 per year. In addition to the material which its title would imply the Review covers the very latest developments in tactical doctrines and teachings of the Command and General Staff School.

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Volume XIX
1939

Number 75

COMMAND AND GENERAL STAFF SCHOOL

MILITARY REVIEW

QUARTERLY REVIEW OF MILITARY LITERATURE

LIEUTENANT COLONEL E. M. BENITEZ, *C. A. C., Editor*
MAJOR WILLIAM H. SPEIDEL, *Infantry, Assistant Editor*

December, 1939

Fourth Quarter

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Books

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The Book of War—*Translated from the Chinese by Captain E. F. Calthrop, R. F. A.*

Gas in the Next War—*By Major General Sir Henry F. Thuillier*

Stalin—*By Boris Souvarine*

Survival; Through War and Revolution in Russia—*By D. Fedotoff White*

Road to Empire; The Life and Times of Bonaparte the General—*By Fletcher Pratt*

Sea Power and Today's War—*By Fletcher Pratt*

World in Arms; A Study in Military Geography—*By Major R. Ernest Dupuy*

The War Behind the War 1914-1918—*By Frank P. Chambers*

The Road to Richmond—*By Major Abner R. Small*

Before America Decides; Foresight in Foreign Affairs—*Edited by Frank P. Davidson and George S. Viereck, Jr.*

World Economy in Transition—*By Eugene Staley*

Economic Aspects of Defense—*By Harold Macmillan*

●

Comments on the contents of the books listed here may be found on page 58 following.

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Mission

The object of this publication is a systematic review of current military literature, through cataloging articles of professional value, in selected military and naval periodicals, in the domestic and foreign field.

Articles from foreign periodicals are treated by translations of titles and digests of contents; material of particular importance is covered more extensively in a section of " Foreign Military Digests."

A " Library Bulletin " Section lists books, recently accessioned, which are of particular significance.

This *Review* is published as a guide to modern military tendencies and to inspire vigorous thoughts on the subjects treated.

The opinions expressed and conclusions drawn in articles are *solely those of the authors and are in no sense official.*

●

Acknowledgment

The editors desire to express their thanks and appreciation to the many persons who have valuably assisted in the preparation of material for this issue. The work of contributors has been done in addition to their regular duties and on their own time. We are very grateful to the following officers for their generous donations:

LIEUTENANT J. DASHER: *Krasnaya Zvyezda* (20 June-15 August 1939)

CAPTAIN H. N. HARTNESS: Across the Line of Departure — Conduct of the Attack — Historical Illustration

LIEUTENANT F. R. HENRIKSEN: *Revue Militaire Suisse* (April, May, June 1939)

CAPTAIN H. D. KEHM: *Wissen und Wehr* (March, April, May 1939); Book Reviews

CAPTAIN A. L. KEYES: *Revue d'Artillerie* (February, March 1939)

CAPTAIN W. E. LORENCE: *Bulletin Belge des Sciences Militaires* (April, May, June 1939)

MAJOR GENERAL FRANK PARKER: The Ever-Changing Application of the Unchanging Principles of War

MAJOR L. K. TRUSCOTT, JR.: *Revue de Cavalerie* (May-June 1939)

LIEUTENANT COLONEL F. R. WALTZ: Infantry in Offensive Combat

●

The Cover

First Army Maneuvers, Plattsburg, N.Y., August 1939.
Troops advancing to support attack.

Batt attack
during th

Wide

The Ever-changing Application of the Unchanging Principles of War

The Eternal Principles of War and Their Ever-changing Application, 1914-1918-1939.

BY MAJOR GENERAL FRANK PARKER, *U.S. Army, Retired.*

The first effect produced by war is to modify the previous form of its principles and at times so much so that at first sight they are no longer recognizable. Hence a surprise for the commander. No amount of preliminary preparation can ever prevent this either at the outbreak of war or during its development. The real tests of instruction and character are those surprises.

The purpose of military organization, education and training, therefore, is to provide the means and the ability to make prompt and proper application of the unchanging principles of war to the ever-changing causes and effects of modern civilization.

This ability will be manifested in *Method of Command* —the guiding principles of which, for all phases and eche-

lons, must be—(1) Singleness of Purpose; (2) Simplicity of Procedure; (3) Spirit of Initiative, applied with unflagging energy—physical, mental and moral—to operations oriented on a selected objective.

I desire to call your attention to the fact that I am considering particularly the situation on the French front, 1914-1918, where long and strong continuous lines faced each other. I have taken this situation because it was the field of the main decision at all times during the World War. As the present European war begins, the final decision will probably be made upon the same field.

On this front, after the meeting engagements of the summer and autumn of 1914, the operations consisted exactly in attacking or defending a main battle position covered by the outpost system.

Should this bring to your mind labyrinths of trenches and wire entanglements, remember that it was neither trench nor wire that caused the strength of these organizations—but the fire system that used them as a setting. Towards the close of the war, veteran troops could, within a very short time—a very few hours—organize a defensive system of fire, small arms and artillery, protected by hasty entrenchments, of formidable resisting power.

The three elements by which the efficiency of a combat unit was judged in the World War, were

(1) its mobility or marching ability;
(2) its ability to storm; and
(3) its ability to hold a main battle position.

As in the World War, so in future wars, we shall have to solve one or both of two classes of problems: (1) the continuous front, and (2) the operations of independent or widely separated commands.

In the present situation the World War is the best guide, and the continuous front may well be considered as the future field of final decision. Where evenly matched combinations of nations meet in modern warfare, the proposition of the continuous front has apparently become the theorem, and the action of independent bodies on open terrain, the corollary.

In this discussion, therefore, I shall ask you to keep in mind the maneuver on the continuous front, as presented to us in France from 1914 to 1918. Whatever may be its application to future war, it represents the most gigantic and difficult problems yet presented to military minds. A study of its lessons and of the Method of Command suitable to such situations, in view of the war, like the other phases of man's effort, is constantly on the increase in scope and intensity.

Principles of war may be summed up, so far as the conduct of operations is concerned, in the well known expression "Economy of Force." Briefly, this is understood as the concentration of all resources at a given time on a given point. Now the question arises how is this point to be selected. As a matter of fact the greatest soldiers of the past (except Marshal Foch) have been so busy applying the principle of the Economy of Force that they had no time apparently to define the principle.

In 1900, basing his definition upon the date 1870, Marshal Foch wrote: "the principle of the Economy of Force is the art of concentrating all its resources at a given moment on a given point; to arrange so that they communicate freely with each other and to assign them to a fixed objective, which obtained to have them converge again against a new single objective." But this definition, satisfactory in 1900, did not seem to satisfy in 1918—particularly from the strategical point of view.

We find in 1914 a combination of geographical objectives and troop objectives (enemy's principal mass). Napoleon's doctrine disregarded geographical objectives and pursued the enemy's principal mass of troops. But in 1914-1918, the railroads in seven days (all stops included) transported divisions from the Russian front to the French front. Add to this, the modern capacity of auto and air transport and the commander has a difficult question to answer: "Where is the enemy's mass?"

Then, this difficult question decided, the question of how to organize and conduct the corresponding maneuver, *i.e.*, how to build the system of forces corresponding thereto, so as to effect concentrated effort thereon. Up to 1914, the commander employed relatively small bodies of troops disposed with wide intervals and with practically unlimited surrounding terrain. Troops had little resisting power. A battle lasted a few hours—a day or two at most—and the fastest movement of reserves was less than twenty miles a day, and of a very rigid amount, depending almost entirely on the original destination of troops. Now, the reverse situation exists. The defensive power of troops has enormously increased. The movement of troops by railroad and automobile has become very swift and very variable. Quantities of matériel and supply are needed to overcome the powerful resistance of troops on the defensive, and it takes time to concentrate these supplies.

Instead, therefore, of a smooth flowing operation. lasting a short time on the battlefield, we now have, where serious forces confront each other, a system of operations which will consist, for the victors, in the storming of a succession of organized battle positions, after proper preparation for each. This preparation will take time. The campaign, therefore, will run in violent jerks: attack, exploitation, attack. Already in Manchuria battles began to last some three weeks, and in 1914-1918, they lasted into months—as the results of new matériel and new transport.

We find Napoleon's doctrine successfully applied in the Central Empire's campaign against Servia and Rumania, where Napoleonic conditions existed, but this doctrine could not be applied on the scene where great national effectives faced each other on long and strong continuous lines, whose flanks rested upon impassable barriers. It was a new situation, one of the surprises of the war.

Now, national mobilization, the defensive power of modern armament, and the rapidity of locomotion, cause hundreds of miles to be rapidly and strongly occupied, and allow reserves to be displaced with great rapidity. Until definite decisions are obtained we shall see again the long continuous front, as in Europe in the World War, and the difficulty for the attacker of finding his enemy's reserves arriving rapidly at the point attacked. Rapidity of decision and movement must now give way to solutions requiring rapidity of calculation based on the above considerations.

The whole form of maneuver is changing and we must find and keep its most recent development in mind for our

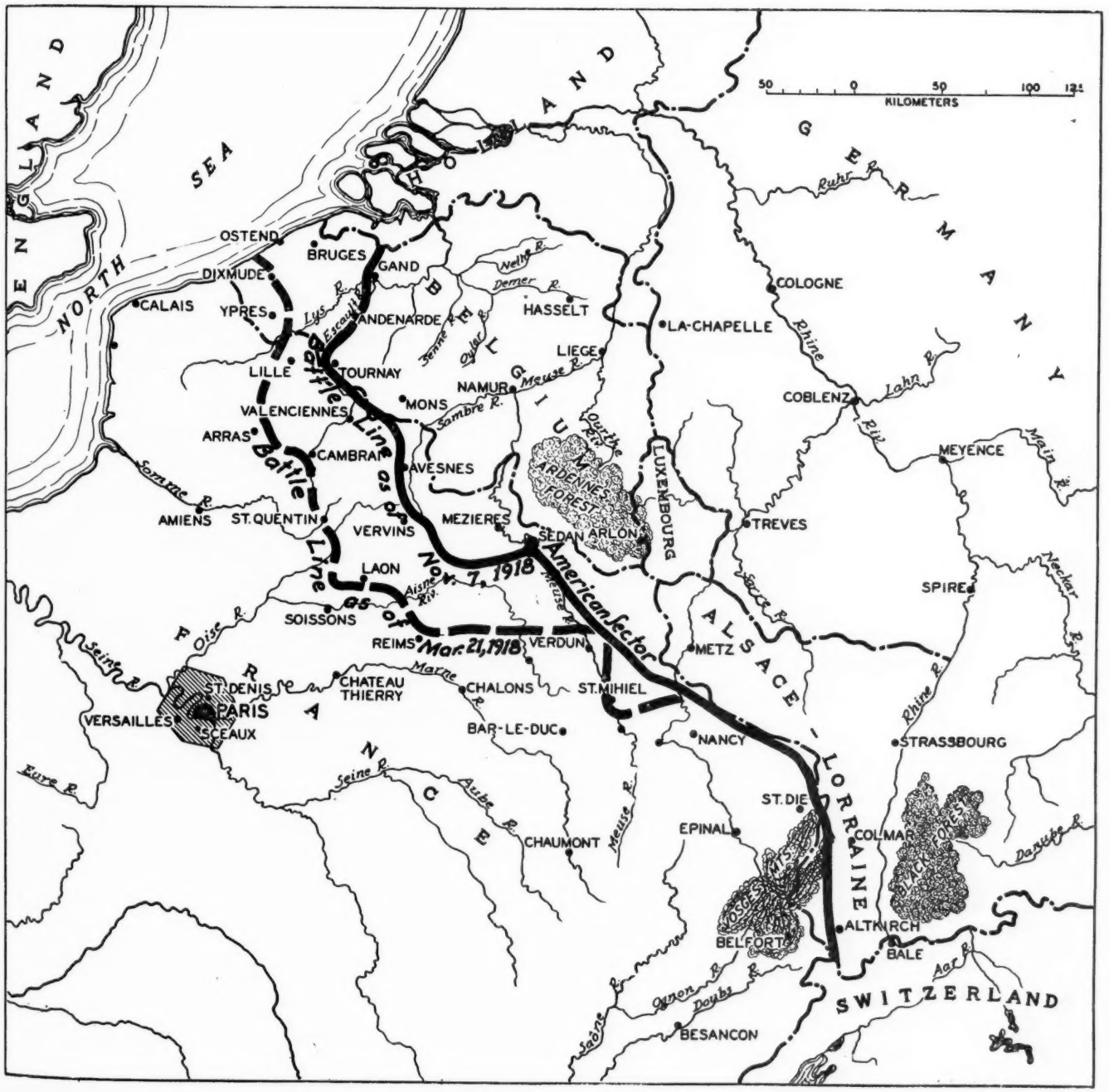
training. It was not until March, 1918, that any Allied strategic maneuver was possible, for it was not until 26 March that the Allied forces had a commander, and only then because events forced his appointment.

With the appointment of Marshal Foch on the afternoon of that date as "Coordinator of the French and British Armies" and with his appointment on 3 April, 1918, as Allied Commander, we find modern maneuver applied to the continuous front by the master strategist, who brought to the task a ripe preparation of study and experience. The maneuver, as are all really great things in this world, was simple enough in its conception and consisted of:

(1) Choice of strategic objective—the German communications in the bottle neck south of Ardennes, between Namur and Metz, which connected the German forces of the north wing with those of the southeast wing.

(2) An uninterrupted series of attacks on wide army fronts to use up and hold the enemy's reserves, called hastily to the various points of attack along the northwest front, and

(3) Then, when the enemy's reserves in the northwest were exhausted and when the northwestern and main wing was severed from the southeastern wing by the capture of the Meuse Valley at Sedan and Mezieres, a decisive attack in Lorraine toward the north to crush the German left wing and to cut off from the Rhine the enemy's main force of the northwest wing which had been held and battered continually along the Meuse, the Sambre and in Belgium.



THE WORLD WAR BATTLE LINES, 1918

The enemy surrendered before the development of this second phase, in which our Second Army was to figure, but this analysis shows the new application of the old principle of the Economy of Force. In the choice of objectives, as well as in the maneuver, modern conditions had somewhat obscured this principle, which nevertheless, was the basic directive of this final and successful strategy.

The nature of this study prevents my discussing further at this time the apparent failure of some of the principles of war accepted as almost axiomatic prior to 1914. All that I wish to bring out here is that the form of the principles of war at any epoch is a direct function of the means of execution of that epoch, and hence an ever-changing function.

After all, we need but remember that strategy is only a choice of objectives, primary and secondary, and that its development is but the directing of certain columns upon these objectives: that the essence of the comparison of maneuver of the past with that of the present brings us to the unmistakable conclusion that, in the past, the majority of maneuvers consisted of rapid changes in the directions of columns of troops, marching at a slow and uniform speed, and little hampered by the supply question. Therefore, for such conditions we find the initial and subsequent disposition of troops, so far as numbers are concerned, a very rigid matter, while the changes of direction were relatively very supple.

Now we find just the reverse—modern mobilization, armament and transport cause mass movement by zone and not by line—and national forces are riveted to their railroads and roads. On the other hand, the rapidity of modern transport causes great suppleness in the distribution of troops; hence we now have rigidity in direction of columns but great flexibility in distribution of troops and supply.

To resume: From flexibility of direction and rigidity of distribution of troops and supplies, we have passed to a phase of flexibility of distribution and rigidity of direction of columns. We must, therefore, to keep abreast of maneuver (strategy, tactics, combat), be ready to apply our methods either to situations corresponding to those past conditions (which may again arise) or to those presented by the last war.

The principles remain unchanged, their form alone has been modified, and the Economy of Force may still be announced as:

(1) Choice of objective (effectives, or matériel whose loss produces the greatest effect upon the enemy).

(2) Application of one's own force (effectives and matériel) on lines of direction along which the Commander-in-Chief distributes and moves his forces.

With the increasing application of steadily developing science, will the above statement continue indefinitely to be completely sound? It would be better, I believe, to leave the dangerous ground of theoretical discussion and return to the safe and sound terrain of practical values. We may, with no risk of argument, state that the successful application of the principles of war, wherever these principles may be, will depend upon a commander's intelligent knowledge of what he wants, and of the necessary instruction and character to efficiently apply the clearly defined positive elements of war. This is definite, clear, simple, as should be all basic matters connected with war.

Even the term "doctrine" no longer seems sufficiently concrete; the term "method of work" seems more suitable. It presents the idea of military instruction as one of concrete definite cases and situations; it visualizes battalions in attack or defense, the definite duties of G-1, G-2, G-3, or G-4; it presents the actual solution of real problems, such as war presents; it brings to the mind the picture of the practical application of theory to real situations of troops and supply, without which, theory is a dangerous possession. No man is more dangerous than the commander possessed of theoretical information alone, even when his theory be sound, for he lacks the power to visualize its application, and that knowledge is of slow and painful acquirement. There is no short cut to its possession and no road of flowers leads to its domain.

Moreover, the commander who will succeed in days of severest trial, will be the man who understood through a long and faithful apprenticeship how to apply the principles of war by means of that element which gives to material things the spirit of the man who handles them—that commander (be he platoon leader or commander-in-chief) will conquer who, through his subordinates, can animate the rifle, the machine gun, the cannon, with his own intelligence, energy and devotion. This is the last and final test of military education and training, and the man who is to give his life to the profession of arms must, from the day of his initiation into the armed service of his country, be taught, and constantly maintained in the principle, the greatest of all military principles, that we make war with men.

Man is the great weapon of war. He is the mind, nerve, and soul of the material weapon. The successful application of the Art of War to its most difficult phase, the conduct of campaign in time of adversity, will depend in the greatest measure, in all echelons of command, upon the ability of the commander to know and possess the heart of his command. Everything in war revolves about the personality of the commander. All real feeling is personal, and there can never be personal feeling where there is not personal contact. As a command feels, so will it act.

Our system of military education and training must have as its fundamental purpose, the production of leaders capable of:

(1) Creating the proper military spirit in the subordinates; and

(2) Utilizing this collective spirit properly by intelligent direction, in all echelons.

Only so, can we successfully apply education and training to its proper ends in the scheme of military effort. No other system will stand successfully the tests of extreme adversity—and it is for the dark hours of reverses that we must specially prepare. Our system must produce, not one, but many men capable of directing our national military destiny at such times, for such crises wear out a commander-in-chief rapidly. His supernumerary must be ready and his staff and immediate subordinates in the chain of command must be capable of his own strategic vision and action.

War must ever be a matter of great strategic conceptions along very simple lines—conceptions which in their

material execution become increasingly difficult and complicated as we approach the line of battle. Strategy is but the seed—the tree and its fruit are the results of the application of strategy, by tactics and combat.

And so it is that the strategist must be able to visualize intelligently the final execution of his order, with due regard for the powers and limitations of the varied elements of his command; otherwise, his strategy is but a source of disorder and disaster. But even with sound strategy, all depends on the powers of execution of the command. The knowledge necessary to the strategist is vast. Nothing takes the place of study and experience and there is no short cut to this knowledge.

CONCLUSIONS

The purpose of military education and training is, therefore:

(1) To provide a group of men capable of producing sound strategy.

(2) To provide troops capable of its execution—by tactics and combat.

"The Art of War is quite simple in its conceptions—all depends upon their execution."

"The art of war consists in having always more forces than the opponent, with an army weaker than his, at the point where one attacks, or where one is attacked by him.—NAPOLEON

"Toujours en vedette." (Fr) Always on guard.—Motto of FREDERICK, THE GREAT.

"The men of all ranks who served with me in France added a brilliant page to the record of the American soldier's devotion to his country. No commander was ever privileged to lead a finer force, no commander ever derived greater inspiration from the performance of his troops."—PERSHING

"The troops of every army have their weak moments, for these are part of human nature itself. The general must allow for them as for a given factor, the dimensions of which it is impossible to ascertain."—HINDENBURG

"In war, everything is co-related. Every move has some reason, seeks some object; once that object is determined it decides the nature and importance of the means to be employed."—FOCH

MILITARY NEWS around the WORLD

By MAJOR WM. H. SPEIDEL, *Infantry*

ARGENTINA

An analysis of a new circular issued by the Exchange Control Office under date of September 27 indicates the exchange treatment that will be accorded to the sixteen most important groups of products ordinarily imported from the United States, comprising about two-thirds of the total imports from this country in 1938. The following are some of the groups included in this circular: Passenger automobiles; trucks and busses; automotive chassis; crude oil; airplanes, their accessories and parts; vessels or boats; materials for petroleum exploitation.

(*Latin American Financial Notes*, 14 October 1939)

BALTIC STATES—LATVIA, LITHUANIA, ESTONIA

Soviet-Latvian Pact signed in Moscow, October 5, 1939:

Article 1:

The two contracting parties undertake to render each other every assistance, including military, in the event of direct aggression or the menace of aggression arising on the part of any great European power against the sea frontiers of the contracting parties in the Baltic Sea or their land frontiers across the territories of the Estonian or Lithuanian Republics, as well as against the bases indicated in Article 3.

Article 2:

The Soviet Union undertakes to render the Latvian Army assistance in armaments and other military equipment on favorable terms.

Article 3:

For the purpose of guaranteeing the security of the U. S. S. R. and consolidating her own independence, the Latvian Republic grants the Soviet Union the right to maintain naval bases at the towns of Liepaja (Libau) and Ventspills (Windau) and several aerodromes for aviation on lease terms at a reasonable price. The exact sites for the bases and aerodromes shall be allotted and their boundaries defined by mutual agreement. For the protection of the Irben Straits, the Soviet Union is granted the right to establish on the same conditions a coastal artillery base on the coast between Ventspills and Pitrage. For the protection of the naval bases, aerodromes and the coast artillery base, the Soviet Union has the right to maintain at its own expense, on the sites allotted for bases and aerodromes, Soviet land and sea armed forces of strictly limited strength, their maximum numbers to be determined by special agreement.

Article 4:

The two contracting parties undertake not to conclude any alliance nor to participate in any coalitions directed against either of the contracting parties.

Article 5:

The realization of this pact should not affect in any way the sovereign right of the contracting parties, in particular their state organization, economic and social systems, and military measures.

The sites allotted for bases and aerodromes (Article 3) remain territory of the Latvian Republic.

Article 6:

This pact comes into force upon the exchange of instruments of ratification. The exchange of these instruments

shall take place in Riga within six days from the day of this pact. The term of the validity of this pact is ten years, and unless one of the contracting parties finds it necessary to denounce this pact one year prior to the expiration of its term, the pact shall automatically continue valid for the next ten years.

Lithuania and Estonia:

These two Baltic states have signed similar treaties with the Soviet Union. The treaty with Lithuania provides:

1. Return of Vilna to Lithuania.
2. Mutual military assistance.
3. Right for the maintenance within Lithuania of Russian troops and air forces.
4. Right to take measures to "secure the inviolability of the territories of the contracting parties."

The treaty with Estonia provides for the establishment by the Soviet Union of naval bases at Tallinn, Baltic Port, and bases on the islands of Dagoe and Oesel.

BELGIUM

Issue of Gas Masks:

The defense minister undertook the issue of 200,000 additional gas masks to the civil population. 600,000 have already been issued.

(*Militär-Wochenblatt*, 15 September 1939)

BOLIVIA

A decree of August 31 provides for the purchase by the Government of all gold mined in Bolivia.

(*Latin American Financial Notes*, 14 October 1939)

BRAZIL

The funds destined for the Secretary of the Treasury for the first year of the 5-year plan will in great part be employed for payments on armament contracts which include:

(a) Construction of 6 destroyers in Great Britain.
(b) Construction of 3 destroyers in Brazil with material purchased in the United States.
(c) Acquisition of planes in Germany and the United States.
(d) Batteries of Skoda antiaircraft artillery.
(e) Guns and various types of ammunition from Krupp.
(f) Various equipment for the Navy.

(*Naval Institute Proceedings*, September 1939)

CHILE

Banks report that substantial amounts of exchange were granted during the week and that no particular difficulty had been noted in connection with applications for prior permits. Nevertheless, it has been reported that the Control Commission has turned down some requests on the grounds that such importers have exceeded the limits fixed by the Commission for 1939 imports.

(*Latin American Financial Notes*, 14 October 1939)

CHINA

A second group of Soviet volunteers of undisclosed number has recently arrived in China from the U.S.S.R. via Sinkiang Province. They have been assigned to various Chinese war zones, presumably removing from the minds of the Chunking leaders doubts of the Soviet attitude toward China, especially fears of possible Soviet-Japanese rapprochement following the Nomonhan truce, according to a Reuter's dispatch from Chungking.

The first group of Soviet volunteers reached China last autumn when the Hankow battles were still raging.

(*The Japan Chronicle*, 5 October 1939)

COLOMBIA

The Board of Exchange and Export Control reports that foreign exchange receipts from January 1 to September 16 were U. S. $72,882,000. This amount included new capital importations totaling U. S. $17,330,000. According to the same source the value of exchange purchase permits issued between January 1 and September 16 were U.S. $79,154,000, allotted as follows (in thousands of dollars):

Imports from countries other than Germany	51,934
German imports	10,335
National Government	3,406
Foreign residents	4,490
Debts contracted prior to September 24, 1931	394
Miscellaneous	8,595
Total	79,154

(*Latin American Financial Notes*, 14 October 1939)

COSTA RICA

A decree of September 8 provides for the continuance in 1940 of the budget for 1939. Under Article 2 the President is authorized to effect such economies as he deems necessary in the 1940 budget as well as in the current budget. This action has been taken because of the war in Europe and its immediate and anticipated repercussions on the economy of Costa Rica.

(*Latin American Financial Notes*, 14 October 1939)

CUBA

Among other provisions of the tax bill approved by the House of Representatives during the fortnight ended Sep-

tember 16 was one which, if enacted, would authorize the President to issue up to 6,000,000 pesos in one per cent short-term Treasury notes, to be used preferably for the payment of obligations incurred during the current fiscal and calendar year. The President would also be authorized to issue up to 6,000,000 pesos in three per cent short-term Treasury notes to be used for borrowing from local banking institutions during the balance of 1939, the amounts necessary to meet budgetary obligations. The proceeds from the proposed new taxes would be pledged to the service of these obligations. The aggregate amount of the two issues would be limited, however, to 6,000,000 pesos.

(*Latin American Financial Notes*, 14 October 1939)

DENMARK

Keels of 2 torpedo boats of 700 tons displacement have been laid at the Copenhagen Navy Yard. These boats will be capable of making 35 knots.

(*Naval Institute Proceedings*, September 1939)

ECUADOR

The impounding of sucres in the Central Bank in connection with the required deposit of 30 per cent of import orders has partly been relieved by recent legislation authorizing the return of the deposits against orders for Germany upon demand and for other countries upon proof of impossibility of fulfillment and deposits are no longer required for goods for use in agriculture and domestic industries by the terms of the same decree.

All European currencies are quoted lower since the start of the war. The supply of askimarks is exhausted.

(*Latin American Financial Notes*, 14 October 1939)

EGYPT

Formation of Egyptian Militia:

On August 28, 1939, at the meeting of the Egyptian cabinet sponsored by the Defense Minister, and at which were present the supreme military commander and the English General Wilson, there was created a national militia to consist of 10,000 men over fifty years of age for the purpose of garrisoning the larger cities. Certain areas of the upper-country and in the region of the delta of the Nile were set aside as areas of refuge should it become necessary to clear the cities of women, aged men and children. On September 1, 1939 a law was enacted affecting the flight of airplanes over cities.

(*Militär-Wochenblatt*, 22 September 1939)

FRANCE

The French General Staff has paid special attention to the problems of replenishment of infantry ammunition while under fire in the field. With the increasing fire power of infantry, the question of how to replenish the vast quantities of ammunition expended by the forward bodies has become acute. As an example, in ten minutes of crisis, a French battalion can actually fire away no less than three tons of ammunition.

The solution of the problem appeared to lie in the development of some means of mechanical transport which should:

(a) Be armored, fast and low on the ground so as to be able to maneuver in the zone of infantry fire.

(b) Possess high cross-country performance in order to reach the fire positions, wherever they might be.

With the development and production of the *Chenillette Renault* (light, all-tracked vehicle), the French military authorities claim that they have overcome this problem and have assured a steady and adequate flow of munitions from the rear to the forward bodies.

(*Journal of the Royal United Service Institution*, August 1939)

Super-heavy Tanks:

Tanks of this type are reported to be playing an important role. They may weigh up to 75 tons or more, and are so heavily armored as to be proof against a direct hit from most antitank guns. As well as other artillery, 155-mm howitzers may be mounted, and as many as eleven machine-guns. Various authorities have estimated their speeds at between eight to ten miles per hour. It is interesting to note that a German work, *Panzertruppen*, published in Berlin in 1938, speaks of the French superheavy tank as "a weapon of position-warfare."

(*Illustrated London News*, 30 September 1939)

Unity of Command:

It has been announced that in the present war the supreme direction of the operations at sea is vested in the British High Naval Command, just as the supreme command of the military operations on the Western Front is vested in the French High Army Command. The advantages of such strategical coordination, established from the very outset, are sufficiently self-evident to all who recall the results of the absence of any such understanding during the last war.

The French Navy of today contains a much larger proportion of quite modern warships than at any period in its recent history. But their particular value lies in their very high mobility.

(*United Services Review*, 28 September 1939)

GERMANY

New aircraft carrier Graf Zeppelin:

The *Graf Zeppelin*, launched a year ago this December, and her sister ship under construction, are cruisers, as regards armament, speed and protection, as well as aircraft carriers. Both will have a standard displacement of 19,250 tons, a length of 820¼ feet, a beam of 88½ feet and a mean draft of 18⅓ feet. They will carry 40 aircraft and will be armed with sixteen 5.9-inch guns, ten 4.1-inch antiaircraft

guns and twenty-two 37-mm antiaircraft guns. Geared turbines will give them a speed of 32 knots.

As compared with the new British aircraft carrier *Ark Royal*, which has a standard displacement of 22,000 tons, their aircraft capacity is low, a sacrifice apparently made in favor of armament, protection and speed.

(*United Services Review*, 6 July 1939)

Heavy mortars.—Reports from observers of the recent fighting in Spain lay stress on the high value of the heavy (3-in.) mortar acting in support of attacking infantry.

In the German Army, the heavy mortar (3.16-in.) is the high trajectory weapon of the battalion commander, just as the light mortar is the high trajectory weapon of the platoon commander. In the battalion, the heavy mortar is organized as a platoon of three sections, each of two mortars. The fire unit is the single mortar, and it is laid down that, even when two heavy mortar detachments are grouped together, each detachment should be given a separate fire task. Only in exceptional circumstances, when the firing positions of mortars are at some distance from the O.P. and telephonic communication is necessary, will the senior section commander control the fire of both mortars. A single mortar and its O.P. are not normally to be sited together.

The method of ranging is by single mortar using the bracketing method of procedure or "creeping" until a bracket has been obtained. In fire "for effect," 3 to 8 rounds are usually fired at a rapid rate.

(*Journal of the Royal United Service Institution*, August 1939)

Air Force commands.—When the German Air Force was reorganized early last year, the old Luftkreis VI, which included all operational units, training establishment, recruit and equipment depots for cooperation with the navy, remained unchanged and was renamed Luftkommands See. The Luftkommands has now been abolished and an air force officer, Major General Ritter, has been appointed for liaison duties with the German Admiralty. He will command the air force embarked in ships, but the other units have now been placed on exactly the same footing as units of the German Air Force which cooperate with the army.

(*Journal of the Royal United Service Institution*, August 1939)

Germany's Defense Council:

1. Field Marshal Goering, Minister of Aviation, Chairman of the Council.
2. Herr Rudolph Hess, Deputy of the Fuehrer and Minister, one of the four representatives of the Civil Administration on the Defense Council.
3. Doctor Lammers, Reich Minister and Chief of the Reich Chancellery, coordinating link between the ministries.
4. Doctor Funk, Minister of Economics and President of the Reichsbank, Plenipotentiary-General of Economic Affairs.
5. Doctor Wilhelm Frick, Minister of the Interior, Plenipotentiary-General for the Reich Administration.
6. General von Keitel, the Chief of Staff of the Supreme Command of the Armed Forces, one of the two military representatives.

(*Illustrated London News*, 9 September 1939)

GREAT BRITAIN

Improvements to the British Fleet:

On August 24, 1939, the destroyer *Juno*, the last of the eight of the *Javelin* class begun during the fall of 1937, entered the British service.

With the conversion of the battleship *Valiant*, to be followed by the *Queen Elizabeth* and the battle cruiser *Renown*, the fleet will gain three great battleships.

The *Ark Royal* greatly improves the condition of the fleet.

The four great cruisers *Liverpool*, *Gloucester*, *Belfast* and *Edinburgh* have also joined the fleet. The last two will strengthen that portion of the fleet whose primary mission is to combat submarines. There has been a recent addition of five 1090 ton and three 500 ton submarines. The greatest improvement, however, has been in the addition of vessels for counter-submarine operations: 10 motor torpedo boats, 5 speedboats and more than 80 converted fishing steamers. At present there is under construction about 200 ships, totalling about 870,000 tons, including 9 battleships, 6 aircraft carriers, 25 cruisers, 43 destroyers and 19 submarines.

(*Militär-Wochenblatt*, 15 September 1939)

The new battleships of the King George V Class:

These new battleships, each with a displacement of 35,000 tons, will be the largest battleships ever built in England, since the *Hood*, with a displacement of 42,100 tons, is rated as a battle cruiser. It is expected that all five will be commissioned in two years' time. The launching dates are as follows:

King George V—February 21, 1939
Prince of Wales—May 3, 1939
Duke of York—September, 1939
Beatty—November, 1939
Jellicoe—Early in the New Year.

Armament: Ten 14-inch guns disposed in one quadruple turret forward with a twin turret superimposed and one quadruple turret aft. Sixteen 5.25-inch dual purpose guns in eight twin turrets. Four multiple pom-poms and four multiple machine guns.

Armor: Unofficially reported to weigh over 14,000 tons each, the water-line thickness to measure 16 inches.

Speed: Expected to be over thirty knots.

Innovations: The first British battleships—

Designed to carry aircraft (those now carrying aircraft have added equipment).

Designed with a hangar in which to stow and a catapult to launch the aircraft into flight.

To mount guns in quadruple turrets.

To be designed without a torpedo armament (it is believed that torpedo tubes should be restricted to the light cruiser category).

To have dual-purpose weapons, equally effective against surface or aerial targets.

To be armed exclusively with all-steel guns, as distinct from wire-wound guns.

The new battleships differ from the capital ships of similar displacement now being built by the United States,

France, Italy and Germany in that they mount 14-inch main armament guns instead of 15-inch or 16-inch. The 14-inch weapon fires a shell weighing 1,560 pounds, while the 15-inch gun fires a projectile weighing 1,920 pounds, and the 16-inch gun discharges a projectile scaling 2,461 pounds.

(*The Fighting Forces*, October 1939)

GREECE

Reserves:

On August 27, 1939 the following were furloughed to the reserves:

Artillerymen of the period 1936-1937,
Cavalrymen of the period 1934-1937,
Signal troops of the period 1935-1937.

(*Militär-Wochenblatt*, 15 September 1939)

HONDURAS

At a recent meeting of the members of the Exchange Control Commission it was decided to enlist the cooperation of owners and operators of steamship and air transport lines with a view to securing a stricter observance of the foreign exchange laws on the part of tourists and other travelers to Honduras.

(*Latin American Financial Notes*, 14 October 1939)

ITALY

Air estimates.—The annual air estimates were recently announced to the Italian Chamber of the Fasci and Corporations. The estimates show an increased expenditure of some 10,000,000 pounds for the air force over the figures for the last financial year.

(*Journal of the Royal United Service Institution*, August 1939)

Man power:

The classes of 1903 and 1913 were called to the colors on 3 September. This placed a total of six classes under arms not including specialists from other class years and the militia consisting of 35 battalions. The navy and the air force have been practically at war strength since 28 August. This brings the total number of men under arms up to approximately 1,700,000. On 1 September the family bonuses were increased to a daily allowance of 6 lire for each housewife and 2 lire for each child.

(*Militär-Wochenblatt*, 15 September 1939)

Ship building:

Four 35,000-ton battleships are under construction. Their delivery will probably be delayed for some time, owing to the shortage of metals.

It is expected that the modernization of the two 24,000-ton battleships *Dnilio* and *Doria* will be completed during 1940.

The keel of the first of the 12 small cruisers of the *Regolo* class was laid at Castellamare in April. They will have eight 5.3-inch guns, six 2.6-inch antiaircraft guns, fourteen machine guns and eight 21-inch torpedo tubes; these ships are also equipped for mine laying.

(*Naval Institute Proceedings*, November 1939)

JAPAN

Air losses.—Several reports from different but reliable sources estimate the Japanese air losses since the beginning of hostilities up to 1 March, 1939, to amount to 1,050 aircraft. Of these, approximately, 22 per cent were brought down in aerial combat, 18 per cent were demolished on the ground, 9 per cent were brought down by A.A. fire. The remaining 51 per cent are reported to have been caused by crashes, forced landings in Chinese territory, guerrilla raids and small-arms fire from Chinese infantry.

Hainan Island Defenses.—Reports from independent sources indicate that Japan intends to establish certain permanent defenses on Hainan Island. The following projects have been mentioned:

(i) The construction of four airdromes.

(ii) The construction of a sea-plane base near Hoihow, the chief port on the North coast of the island.

(iii) The establishment of two defended naval anchorages.

(iv) The building of fixed defenses at four points on the coast.

(*Journal of the Royal United Service Institution*, August 1939)

MEXICO

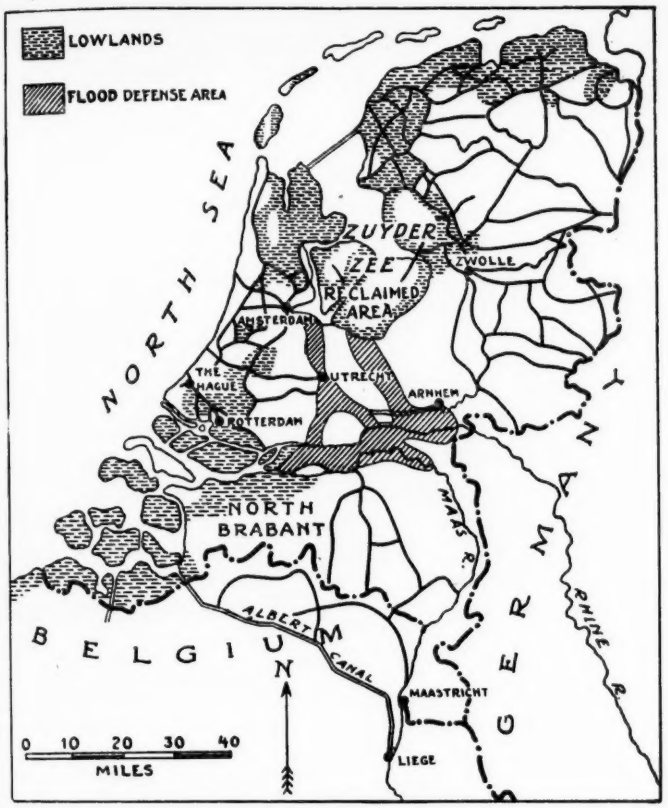
The war in Europe had a natural tendency to strengthen the peso in view of anticipated higher prices for Mexico's raw materials. Speculators were long on dollars and fearing an appreciable strengthening of the peso they threw their dollars gradually upon the market, thus further strengthening the peso.

(*Latin American Financial Notes*, 14 October 1939)

NETHERLANDS

The field fortifications of the Netherlands consist of a series of concrete and steel blockhouses, which in reality is an extension of the Maginot Line. They extend all the way from Maastricht, in the south, to Arnhem and Zwolle, in the center, while another row is in the north, around Amsterdam and in the Provinces of Utrecht and Brabant. The main line of defense, however, remains the system of dykes and bridges. The latter have been prepared so that they can be blown up at a moments notice. The dikes can be opened and the lowlands washed out. The section of Holland that could be of strategic value to an invader can be completely inundated. Recent tests in the opening of the dykes have proved their effectiveness as a prominent part of the defensive system of the Netherlands.

(*Foreign Press*)



NORWAY

The Department of Defense has now approved the specifications for 2 destroyers that are to be built in Horten. Their displacement will be 1220 tons, length 330 feet, beam 32.8 feet, and draft 9 feet. They will have two 4.7-inch guns in a double gun mount forward, with two guns mounted aft. For the present, it is intended that they will also have two 1.6-inch A.A. guns, two 50-cal. machine guns, also two 21-inch double torpedo tubes, 2 depth bomb throwing guns, depth bomb racks and paravanes.

(*Naval Institute Proceedings*, October 1939)

PORTUGAL

The Portuguese Constitution is modeled on the Corporative State plan. It provides for the election of the President by the people for a term of seven years; a National Assembly of ninety members is similarly elected for a term of four years; alongside of this Assembly functions a Corporative Chamber composed of seventy-nine members who are representatives of the local "autarchies" and of the several branches of social activities; administrative, moral, cultural and economic.

The president appoints a Premier, who in turn selects a cabinet. The Cabinet is not responsible to Parliament. There is no party system.

(*Political Handbook of the World*, 1939)

RUMANIA

On August 30 the Minister of War recalled all General Staff Officers attending the Ecole de Guerre in Paris, and all Rumanian officers otherwise engaged in France.

(*Militär-Wochenblatt*, 22 September 1939)

RUSSIA

Mechanized Organizations of the Soviet Union.

A. Mechanized and motorized organizations.

(1) 5 mechanized divisions for the army reserve. These have been identified:

11th Division, stationed at Leningrad: 1100 tanks "T27" and 700 amphibian tanks.

81st Division, stationed at Minsk: 2000 tanks "T27" and 250 amphibian tanks.

45th Mechanized Division, stationed at Kiev.

(2) 9 independent mechanized brigades for the army reserve.

(3) 23 (sometimes referred to as 56) combat car regiments composed of 2 to 3 battalions, et. al., located in the military districts of Leningrad, Moscow, Minsk, Kiev, Kharkov and in the Far East. These regiments in peace time belong to the army corps.

(4) 13 independent combat car battalions, et. al., located in the military districts of Leningrad, Moscow, Minsk, Kiev, Kharkov, Volga, Caucasus.

One combat car battalion is provided for each infantry division. To what extent this is carried out, no one knows. It is possible that the combat car battalions of the infantry divisions are located partially among the 56 combat car regiments. The independent combat car battalions belong organically to the infantry divisions.

(5) 12 independent combat car companies, whose organic allocations are unknown. Perhaps they are at schools.

(6) One company of amphibian tanks is believed to be allocated to each infantry regiment.

(7) 5 completely motorized rifle divisions (established since the beginning of 1937). It is assumed that this number has been increased in the meantime. It is certain that at least a large portion thereof has been motorized.

In these divisions the combat car battalion is composed of three companies. The first company consists of light combat cars, the second of small combat cars, and the third of scout cars.

It appears that the organization of these motorized divisions has not yet been finally determined.

(8) About 9 mechanized brigades that are to be employed for increasing the shocking power of the larger cavalry organizations. Riflemen are mounted on trucks of high mobility, accompanied by organic artillery. These brigades are still in the process of experimentation. For the maneuver there has been allocated, among others, 27 heavy and 225 medium light armored vehicles. The mechanized brigade is therefore practically an armored brigade.

(9) During the last maneuver the motorized brigades participated along with mechanized ones. They were accompanied by highly mobile trucks and a combat car battalion.

During the maneuvers in White Russia there participated, among others, a motor transport brigade, that made use of highly mobile trucks. The brigade consisted of several infantry regiments. To each of these regiments there belongs a combat car battalion and one artillery battalion. In addition they have a greater number of pieces of antitank matériel. Whether this motor transport brigade

LIMITATIONS AND CHARACTERISTICS OF PRESENT DAY TANKS OF THE SOVIET ARMY

Model	*Weight in Tons*	*Length in Feet*	*Width in Feet*	*Height in Feet*	*Speed (Miles per Hour)*	*Crew*	*Thickness of Armor-Plate in Inches*	*Armament*	*Cruising Radius in Miles*	*Slope Clearance in Degrees*	*Vertical Obstacle Clearance in Feet*	*Water Obstacle Clearance in Feet*	*Trench Clearance in Feet*
Light Tanks "Vickers-Carden-Lloyd-Ruskij" "T 27"	1.7	8.07	5.58	4	24.84 (22 H.P. Ford Motor)	2	0.26–0.31	1 M.G.	99 (7.5 gal. cap.)	45	1.3	2.16	4
Light Tanks "Vickers-Armstrong" "T 26" ①	6–8	16	7.9	7.9–8	21.7 (88 H.P. Motor)	3	.19–.51	Model "A" 2 M. G. or 1 M. G. and 1 armor-piercing M. G. (20-mm), or 1 37-mm Gun. Model "B" 1 47-mm Gun ② and 1 M. G.	99.4 (45.5 gal. cap.)	45	2.5	3	6
"Christie-Ruskij"—Fast Tanks "BT 1934"	10.2	18.9	7	7.6	On wheels.....68 On tractors....38 (343 H. P.— 12 Cyl. Liberty Motor)	3	.25–.63	1 47-mm Gun and 1 M. G.	248 ? (100 gal. cap.)	40	2.5	3.28	6.9
Heavy Tank ③ "Mark I" "T 28"	33 ④	23.6	9	9.6	28 (12 Cyl. Motor, 250 H. P.)	6	1–1.4	1 Gun and 3 M. G. ⑤	124 (125 gal. cap.)	43	3	3.9	6.9
Heavy Tanks ③	36 ⑥	30.5	10.5	9	18.6 (12 Cyl. Motor, 350 H. P.) ⑦	12	1–1.4	1 75-mm Gun 2 37-mm Gun 2 M. G.	186	40	3.9	3.9	15
"Vickers Ruskij"—Amphibian Tank	3.2	14	6.8	6.4	On land.....25 On water.....6.2	2	.28–.4	1 M. G. or 1 armor-piercing M. G., 12.7-mm	155	40	1.6	Buoyant	5.2

NOTES

① Model "A" with 2 turrets, Model "B" 1 turret.
② Muzzle velocity 2624 feet per second. 6000 rounds M. G. ammunition, 180 grenades. M. G's have horizontal traverse, Model "A" 265 degrees.
③ Equipped w/radio, gasproof.
④ Often reported in professional journals as weighing 18 tons; impossible.
⑤ According to late reports includes 1 armor-piercing M. G.
⑥ Reported in professional journals as weighing 50 tons; improbable; still it is possible that the weight may exceed 36 tons.
⑦ Installation of a powerful motor, about 500 H. P., should step up the speed to 25 M. P. H.

(*Die Panzertruppe*, July 1939)

is the same as the "motorized brigade" is not known, however, this might be assumed.

(10) The rifle divisions contain motorized reconnaissance detachments. It appears as though all rifle divisions are to be reinforced with motorized reconnaissance detachments. Just how far this will be accomplished, cannot be ascertained. In case of war the present organization must be reckoned with.

In spite of these motorized reconnaissance detachments they have retained as a reserve the mounted cavalry troops, because the experiences of the 1936 maneuver taught that, on account of tactical and technical reasons, it was not always possible to use the armored equipment for reconnaissance purposes. This was attributed primarily to the difficult terrain features in the military district of Moscow and White Russia.

(11) The rifle divisions already have in part, as organic units, combat car battalions with about 50 light combat cars.

(12) Each cavalry division contains a mechanized regiment.

(13) In motorized border guard divisions, the strength of one of which is, at present, less than a rifle division, there are always 3 to 4 border guard detachments. It is known that on the Soviet Russian border there are:

2 motorized border guard divisions in the military district of Leningrad,
2 motorized border guard divisions in the military district of White Russia,
3 motorized border guard divisions in the military district of Kiev.

In Central Asia, the Caucasus and the Far East, on account of the meager highway system, the border guard troops are usually equipped with horses.

(14) The tank school is in Leningrad, technical schools for the mechanized and motorized units are in Orel, Kharkov, Ulyanovsk and Saratov.

Technical schools for motor transport troops are in Kiev and Poltava; there is also a school in Moscow for army motorization.

(15) The military academy contains a large driving and experimental course with obstacles for motor vehicles.

(16) Finally it appears that the entire system of supply is motorized.

B. The Organization of the Mechanized Division.

Staff,
1 reconnaissance brigade,
2 to 3 mechanized brigades,
1 motorized artillery regiment,
1 motorized antiaircraft battalion (3 batteries),
1 motorized pioneer battalion (2 to 3 pioneer companies and one bridge-building section),
1 motorized signal detachment,
1 bombing flight (12 planes),
1 motorized road-construction battalion,
Motorized supply auxiliaries.

The mechanized brigade comprises:
Staff,
1 combat car battalion of 4 companies (each consisting of 3 platoons of 5 combat cars each),
3 motorized rifle battalions, each consisting of 3 rifle companies (each rifle company consisting of 3 rifle platoons and 1 heavy machine-gun platoon), 1 machine-gun company (2 heavy machine-gun platoons on trucks and 1 antitank platoon 47-mm and 57-mm antitank guns), 1 truck-drawn battery, 1 motorized pioneer company containing a bridge-building section.

The reconnaissance brigade consists of:
Staff,
1 motorized infantry battalion (3 companies, strength of each 150 men),
1 mechanized battalion (3 companies, each having 12 to 16 combat or scout cars),
1 combat car battalion (3 companies, each having 15 combat cars),
1 scout car company (3 platoons, each having 4 scout cars),
1 motorized artillery battalion (2 to 3 batteries).

The motorized artillery regiment comprises:
Staff,
2 howitzer battalions (each having 3 batteries),
2 cannon battalions (each having three 105-mm batteries).

The motorized signal detachment consists of:
Staff,
1 radio company,
1 communications platoon for liaison with aircraft,
1 aviation platoon (5 planes),
1 motorcycle platoon.

The mechanized division furnishes for the attack:
The shock group:
3 combat-car battalions,
6 motorized rifle battalions,
1 aviation squadron (24 to 36 bombing and pursuit planes).
The fire power group:
6 heavy machine-gun companies (from the motorized rifle battalions),
6 to 9 batteries of field artillery,
3 batteries of heavy artillery,
3 batteries of antiaircraft artillery.
The reconnaissance and security group:
3 scout and combat car companies,
1 scout car company,
1 motorcycle company,
3 companies of motorized infantry,
1 platoon of attached aviation.

C. Organization of the independent mechanized brigade.

Staff,
1 reconnaissance detachment (3 companies),
3 to 4 combat car battalions of 3 companies each,
1 artillery battalion,
1 platoon of attached aviation.

Special troops:
Pioneer, signal and military police;
Technical troops:
Supply facilities, construction, reserve garrisons, reserve transportation.

D. Organization of the independent combat car battalion:

Staff with:
1 reconnaissance platoon,
1 signal platoon,
1 antiaircraft platoon,
1 military police platoon,
3 mechanized companies (3 platoons of 4 combat cars each),
1 battery attached artillery (perhaps with self-propelled carriages),
1 pioneer platoon,
1 maintenance company:
1 maintenance platoon,
1 combat train platoon,
1 shop platoon,
1 park platoon,
1 salvage section,
1 arms repair section,
1 sanitary section.

E. Organization of the motorized reconnaissance detachment of the infantry division:

Staff,
1 scout car platoon (3 scout cars),
2 to 3 scout and combat car platoons (appear to be loaded for the march),
1 motorcycle platoon,
1 truck-drawn battery (three 76-mm guns),
1 motorized rifle company (on cargo trucks with motorcycles),
1 motorized machine gun company (6 heavy machine guns mounted on cargo trucks),
1 motorized pioneer platoon (on cargo trucks),
1 motorized signal platoon (2 radio sets in trucks),
1 gas defense platoon (on cargo trucks).

F. Organization of the Combat Car Battalion of Infantry Division:

Staff,
1 reconnaissance company,
3 combat car companies (each company 15 light scout cars),
1 battery attached artillery.

G. Organization of the mechanized regiment of the cavalry division:

Staff with:
1 reconnaissance platoon,
1 signal platoon,
1 antiaircraft platoon,
1 military police platoon.
1 mechanized detachment with:
Staff,
1 signal platoon,
1 scout car troop (16 scout cars "BA 27"),
1 combat car platoon (combat cars "T 27" for reconnaissance),
1 combat car platoon (10 combat cars "T 26"),
1 motorized rifle battalion,
1 motorized artillery battalion (2 batteries),
1 motorized antiaircraft battery.

(*Die Panzertruppe*, September 1939)

SALVADOR

El Salvador is the smallest and most densely populated republic of Central America. It enjoys the reputation of being the most intensely cultivated country in Latin America. Eighty per cent of its production is coffee. It is the only Central American republic that has no Atlantic seaboard.

SPAIN

New defense plan:

The men under arms consist of the classes of 1937 to 1941. This gives Spain an armed strength five times greater than that which existed before the Civil War. The new Minister of War, General Varela, has adopted the Caudillo plan for the reorganization of the army, a plan that anticipates a large army. It places permanently about 70,000 men in Morocco, mainly on the coast, but with detachments extending to the southern border. This portion of the army will be organized in two army corps made up of especially selected troops. It will establish a school for officers and troops. Units of the Falangists and Requetes made up of men with good war records will also be included. The customary replacement of the home battalions will be continued. Two training camps in Tizziaza and Darrifien will be established. The home coast (the natural gateway of invasion in the event of conflict in the Mediterranean) is to be especially well fortified.

In addition to the Military Command of the Gibraltar Zone, the Franco-Spanish border along the Pyrenees is similarly organized. The area under the Military Command of Badajos extends along the entire Portuguese border. The entire system of border defense is coordinated.

(*Militär-Wochenblatt*, 15 September 1939)

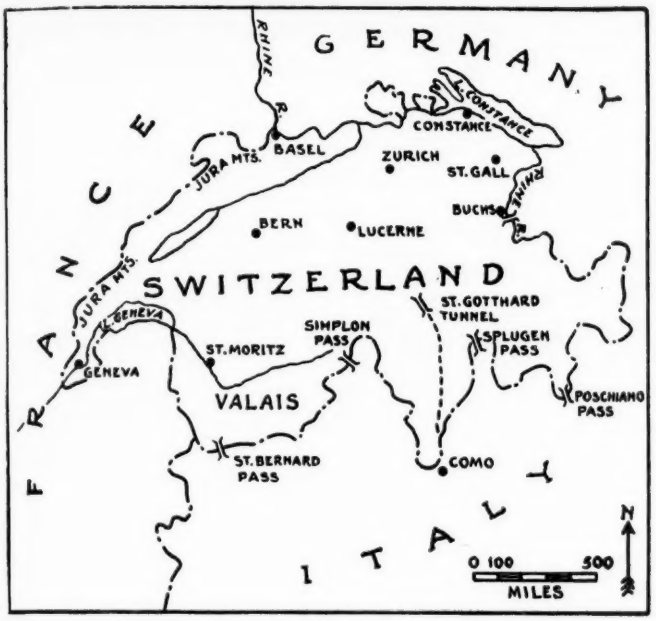
SWEDEN

Drastic restrictions have been imposed on gasoline consumption in Sweden. Gasoline appears to be the only basic commodity of which there is an inadequate supply within the country at this time.

Private driving of automobiles, motor cycles and motor boats is prohibited; special permits are required for trucks, and bus traffic is limited to a minimum. The most recent move in the direction of reduced gasoline consumption was the suspension of all domestic services of the Swedish Air Lines.

(*Foreign Press*)

SWITZERLAND



Under the Swiss system of mobilization, every soldier keeps his complete outfit at home, ammunition excepted. The cavalrymen have their individual horses, the cyclists their bicycles. When the man enters service his equipment is immediately placed in order. Frequent inspections maintain a high standard of preparation. Mobilization is a matter of a few days.

The southern frontier: 1. The St. Gotthard Tunnel. Protected by a series of fortifications cut into solid granite rock. Modern armament and ventilated against gas attacks. Good accommodations for troops and a system of communications between the forts. The fortifications of Mt. Ceneri, south of Bellizona, have been built as an outpost to the St. Gotthard to give time for mobilization to the troops of the Canton du Tessin.

2. The Simplon Pass. The tunnel can easily be made impassable, but the pass is less heavily fortified. The road is guarded by a fort in the Gorge of Gondo. Its defense and that of the passes leading to the Valais is entrusted to the troops of that canton.

The northern and western frontiers: A series of small forts have been erected from Constance along the Rhine to the western ranges of the Jura. All the bridges leading from the north and west to Switzerland have been mined. The forts have been permanently garrisoned.

(*Foreign Press*)

General Guisan:

The long debated question of a General for Switzerland's Army has at last reached a practical solution. On August 30, after a long and animated session of the Federal Assembly, full powers were granted to the Federal Council on the ground of extraordinary and urgent circumstances and Colonel Guisan was named General in command of the Military Forces. The Assembly's choice in the person of General Guisan was borne out by 204 votes in his favor, out of 229 votes cast.

The Federal Council's message emphasizes the phrase: "Our nation will never tolerate invasion." This seems to indicate that Switzerland intends to fight for her soil.

(*La France Militaire*, 12 September 1939)

General Henri Guisan, a descendent of a prominent family, was born at Mezieres on October 21, 1874. He entered the artillery in 1893. In 1908 he became a general staff officer and from that date on his career has been identified either with troops or on staff duties. During the mobilization in 1914 he commanded a battalion and was promoted to Lieutenant Colonel in 1915, becoming chief of staff of the Second Division in 1917. He was an observer on the French front during the German offensive against Verdun. After the World War he was given command of a brigade, promoted to division commander in 1927 and given the command of the Second Corps in 1932. He enjoys the reputation of an excellent soldier and his selection has been well received everywhere.

(*Revue Militaire Suisse*, September 1939)

TURKEY

Mutual Aid Pact between England, France and Turkey, 19 October 1939:

The present treaty is concluded for the period of fifteen years. If none of the high contracting parties has notified the two others of its intention to terminate it six months before the expiration of the said period, the treaty will be renewed by tacit consent for a further period of five years, and so on.

(*Foreign Press*)

VENEZUELA

The Government has just announced a new agricultural subsidy of 5,000,000 bolivares, of which 4,000,000 are destined for the coffee industry. The money is to be expended in the form of unsecured loans to coffee growers.

(*Latin American Financial Notes*, 14 October 1939)

YUGOSLAVIA

The Yugoslavian Army:

The Kingdom of Yugoslavia has an area of 154,433 square miles and a population of 15,000,000 inhabitants of mixed nationalities (Serbes, Croats, Slovenes, 4.3 per cent Germans, 4 per cent Hungarians). In spite of its wealth in natural resources the country is poor industrially, There are available 1,325,000 horses and 22,000 mules, but a very limited amount of motor vehicles. Defense appropriations are as follows: the army $32,240,000; the air force $6,800,000; the navy $6,500,000.

The standing army in peace time consists of 5 armies of 15 divisions (no corps), 2 cavalry divisions, 1 guard division, the Command of Cattaro Bay, the Sebeniko Command, the flying corps and the border patrol. On 1 January 1938

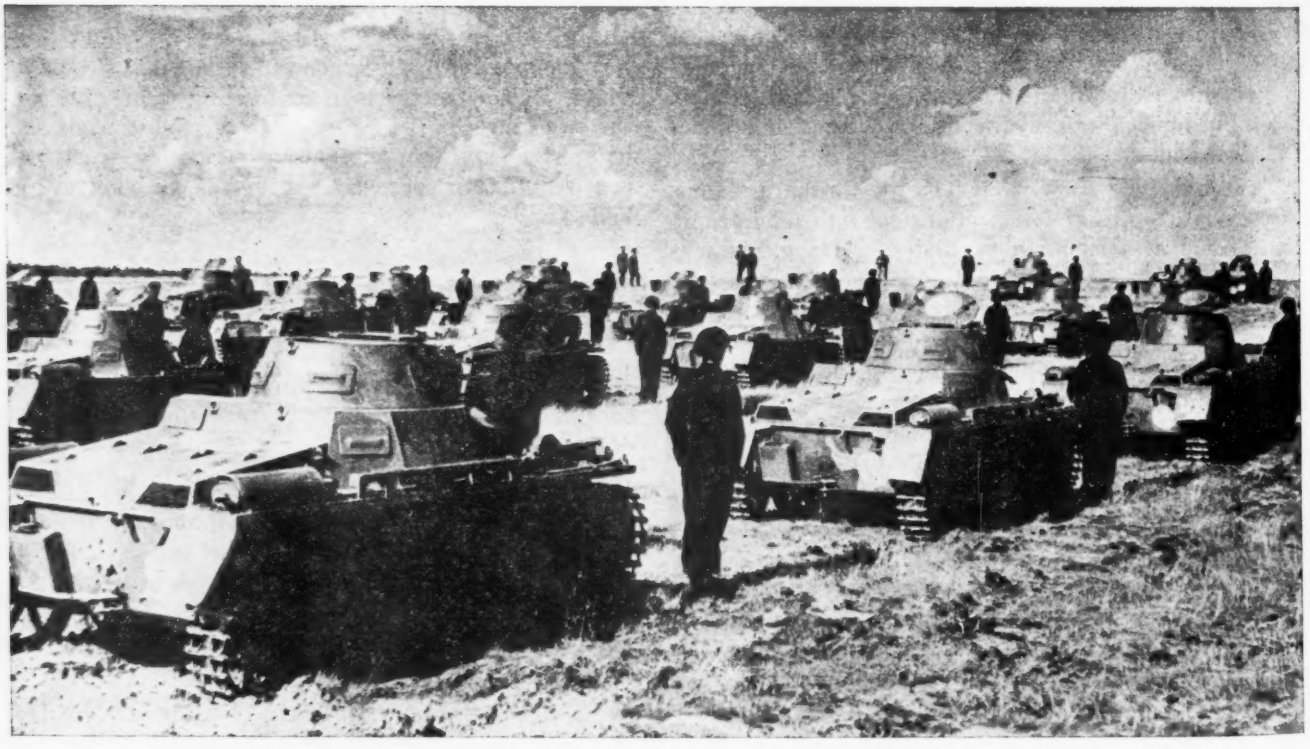
this army included 9245 officers, 9883 noncommissioned officers, 3720 cadets attending military schools and 115,000 men. The border patrol included 43 officers, 193 noncommissioned officers and 8317 men; the navy 583 officers, 2507 petty officers, 514 midshipmen and 4656 men. The gendarmery also has military significance. It comprises 9 regiments having a total strength of 460 officers, 4050 noncommissioned officers and 14,000 men. They are equipped with rifles, pistols, hand grenades, and light machine guns that are made available when the occasion demands. The minister of war is responsible for their training, replacement, clothing and feeding. Their employment in time of peace is the responsibility of the minister of the interior.

Each army consists of 3 infantry divisions, 1 artillery regiment and the necessary supply auxiliaries. Each infantry division is made up of 3 to 4 infantry regiments, 2 artillery regiments and various auxiliary services. Each of the 2 cavalry divisions comprises 2 brigades, each of which consists of 2 cavalry regiments, 1 motorcycle battalion, 1 horse-drawn artillery battalion and the auxiliary services. There is a total of 54 infantry regiments, 2 alpine regiments, 1 guard regiment, 1 infantry regiment for the Cattaro Bay detachment and 1 infantry battalion for the Sebeniko command. Each machine-gun company contains a cannon platoon. A battalion consists of 3 rifle companies and 1 machine-gun company, and 3 battalions form a regiment.

(*Militär-Wochenblatt*, 17 February 1939)

According to statements in the German Press, the Yugoslavian Air Force has a strength of fourteen bomber squadrons, eighteen fighter squadrons and twenty-one reconnaissance squadrons, with a total of about 820 aeroplanes of all types.

(*Journal of the Royal United Service Institution*, August 1939)



REVIEW OF SQUADRONS OF THE GERMAN TANK CORPS THAT PERFORMED SO EFFICIENTLY DURING THE CAMPAIGN IN POLAND.

Acme.

CHINESE INFANTRY ADVANCING THROUGH THICK FOLIAGE.

The Sino-Japanese War

By Lt. Col. E. M. Benitez, CAC

The European war has overshadowed the headlines of the great conflict in the Far East which for over two years had held the world's focus of attention.

No large-scale operations nor spectacular victories have taken place in China for several months. In fact, except for the mopping-up campaign of occupied territory and some guerrilla activities, it might be concluded that the undeclared war between China and Japan has virtually come to an end. Even the border clashes between Japan and Russia have reached a minimum.

Over a year ago, the Japanese captured Canton in South China and Hankow in Central China, cutting off Chiang Kai-shek from those supplies from overseas that were essential to Chinese resistance. Then further efforts to hold him at bay were practically abandoned.

During the last twelve months, Japanese advances on their long front have been inconsequential and half-hearted; they have made no serious attempt to open rail connections between Peiping and Hankow or between Hankow and Canton, but have left the Chinese in possession of the middle section of both lines.

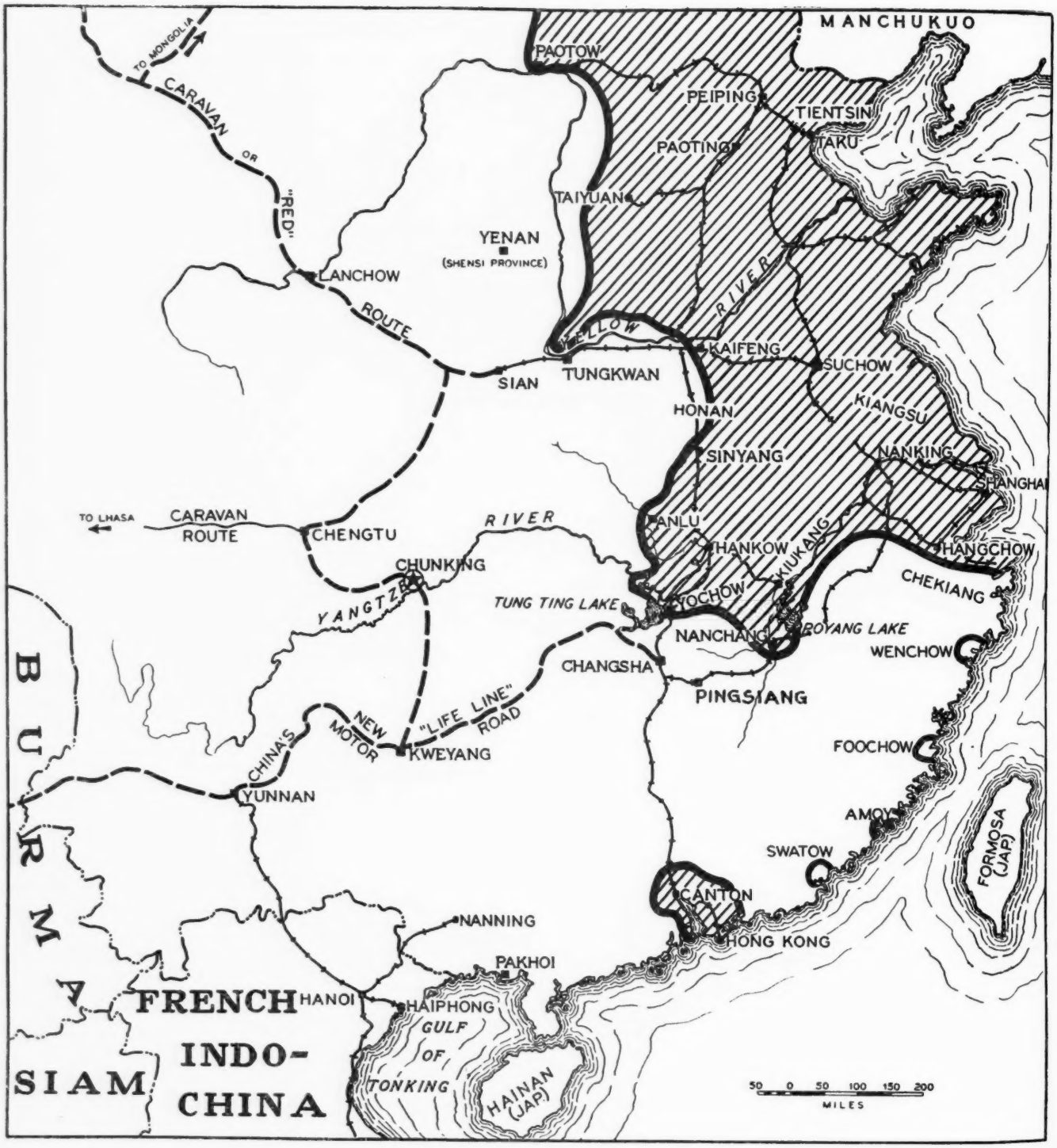
Observers in China believe that large scale offensives may have been abandoned for any one of several reasons. The Japanese Army may have exhausted its striking power and become less effective in more difficult terrain which now has deprived the invader of his mechanical superiority and the assistance of warships which no longer can advance through the treacherous rapids of the Upper Yangtze. On the other hand, the Chinese are favored by the mountains of the West and Southwest which halted the advance of the invader's mechanized units.

On 29 March 1939, the Japanese made a swift surprise attack against the Chinese defenders of Nanchang and took possession of the capital of Kiangsi Province, keypoint on the Chekiang-Hunan railway, which had been a major air base in Central China since the beginning of the war. This was the last operation of any importance.

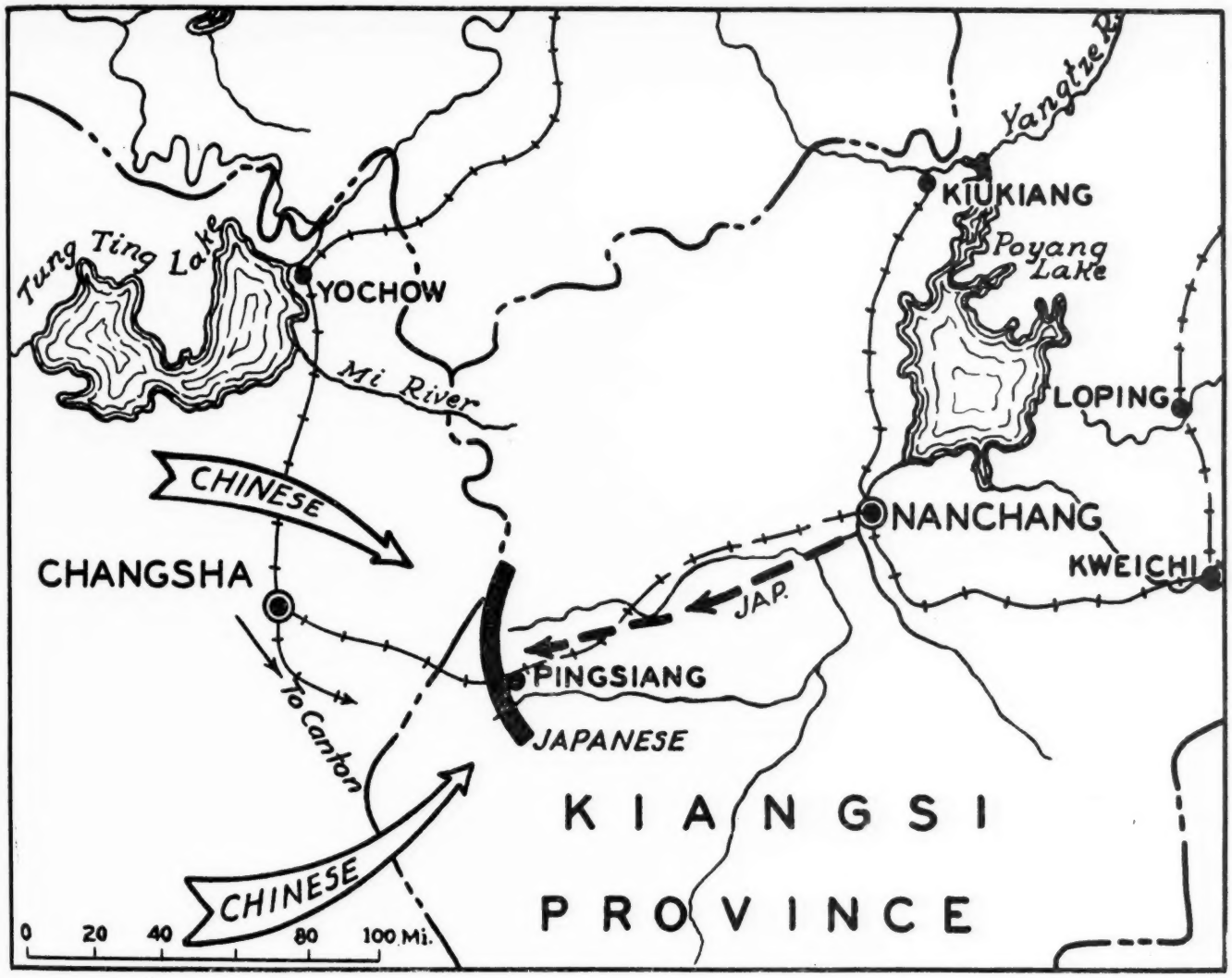
A few days after the Japanese-Russian truce of September 1939 ended hostilities along the Manchukuoan frontier, Japan's Army in China launched an offensive against Changsha, capital of Hunan Province. The city itself is no prize, for what remained after panicky-fleeing Chinese set fire to it in November of last year, has been further devastated by Japanese bombers. But Changsha would serve as a stepping-stone to China's southernmost provinces, which are the last open doors to the Western World. If and when the Japanese control these provinces they will possess practically all of China.

The fall of Changsha was predicted. Instead of a victory, however, the Japanese suffered a reverse which, according to reports, surpasses in importance and scale the Chinese success of May 1938 at Taierschwang. On 28 September 1939, the Japanese captured Pingkiang and advanced to within fifteen miles of Changsha. The Chinese forces had destroyed all roads and railways in the vicinity of Changsha, stationing strong columns in the hills east of the Canton-Hankow railway. In

The Sino-Japanese War



General Situation as of 15 November 1939.



CHINESE COUNTEROFFENSIVE AT CHANGSHA.

addition, a powerful Chinese force was concentrated to the north of Pingkiang for the purpose of cutting off the Canton-Hankow railway in the rear of the Japanese forces which were advancing toward Changsha after the capture of Pingkiang.

The Chinese troops holding the lines near Tungking Lake withdrew and concentrated on the hills flanking the railway and highways. The main body of the Japanese troops was trapped in the mountains, and was forced to abandon its drive on Changsha and had to fight its way north across the Mi River to escape annihilation. Thus, the recent offensive in Hunan Province collapsed.

This victory was widely celebrated in Chungking and other cities of unoccupied China when, by coincidence, the celebration of the twenty-eighth anniversary of the Chinese Republic was taking place. This was a typical Chinese reaction, and observers believe that it would have been far more profitable for the Chinese to press these advantages than to celebrate the victory.

Last September, the flood accomplished for the Chinese what the guerrillas had been attempting in vain for some time when vast areas in North China were flooded. The railroad between Tientsin and Tangka was severed, a considerable amount of Japanese equipment was carried away and, consequently, the pacification and organization of the occupied area suffered a severe setback.

Germany's non-aggression pact with Russia has averted, for the present at least, a Japanese war upon Russia. Until the immediate intentions of Russia in the Far East, now freed from the fear of an attack by Germany in Europe, are ascertained, it is not considered probable that Japan will launch any major offensive action in China.

The war in Europe will prevent shipment of supplies from the Western Powers to Chiang Kai-shek, while Japan can continue to carry supplies from abroad in Japanese bottoms. Close observers maintain that the war in Europe will be disadvantageous to China, as she relies on foreign arms and credits to continue her resistance. Hitherto, China's credits came mainly from Britain and her arms from Germany. Neither of these nations is now in a position to continue assistance to this country. Thus China will be forced to place her main reliance upon Soviet Russia. This, of course, would mean that Moscow will control China's policies. According to the New York Times, reports received from usually reliable foreign circles state that a large Soviet military mission consisting of two generals and many officers arrived at Chungking by plane on 11 October

1939. Experts on aviation, tank, artillery and infantry warfare accompanied the mission.

Japan, as a neutral in the European war, is now feeling its way toward a revised foreign policy. It is apparent that more cordial relations have been established with Great Britain, which had almost reached the breaking point last summer over Japanese allegations that the British were harboring terrorists in their concession in Tientsin.

That Japan fully realizes the magnitude of her problem in China may be seen from the following statements taken from the Japan Weekly Chronicle, 28 September 1939, upon the occasion of the formation of the new cabinet: " The settlement of the China affair is not merely an important task before the Abe Cabinet; Japan's *future destiny* depends on it. Nor is it necessary to point out that military action *alone* cannot achieve its successful solution; sound and wise diplomatic activity must go hand in hand with military action."

Japan will probably take advantage of the European unrest to build up its "new order" in the Far East. Will her diplomacy succeed where her military action has failed?

Note: As we go to press, the Japanese have made a landing in force at Pakhoi and launched a drive toward Nanning, Kwangsi province capital and China's "back door" to the outside world through French Indo-China and British Burma.

When one subdues men by force, they do not submit to him in heart but because not strong enough to resist. When one subdues men by virtue, they are pleased to the heart's core and sincerely submit.

From "The Wisdom of the Chinese," Mencius 374 B.C.

Acme.

CAPITULATION OF WARSAW, 27 SEPTEMBER 1939

The European War

By Lt. Col. E. M. Benitez, CAC

THE COLLAPSE OF POLAND

War tactics, despite spectacular new weapons, have changed little in 2,000 years. What Hannibal's Carthaginians did to the Romans at Cannae, southeastern Italy, in 216 B.C., the Germans did to the Poles last September.

It may sound like a paradox that in an age of machine guns, tanks, and airplanes, we should evoke the ghost of the Roman and Carthaginian Armies. At Cannae, we find a strong Roman center, well forward, presenting a convex front (Posen and Corridor Armies) disposed in great depth, the flanks protected by cavalry; if that protection were removed (the Silesian Army and right of the Corridor Army), the dispositions were such that an attack by the enemy could not be opposed in time or space. Hannibal, on the contrary, stretched his center to the limit (German frontier troops only opposing the Posen Army), in order to be *strong on the wings* (North and South Army Groups), where he sought a decision by a double envelopment in a prearranged maneuver.

There is a striking similarity between the scheme of maneuver of the Germans in Poland, with the Polish Army in the role of the Roman Legions caught in the deadly vice of Hannibal's maneuver. There was little head-on fighting in Poland, the German columns moving swiftly and cutting off the retreat of the defending forces. The left arm of the pincers, operated from Pomerania and East Prussia; the right arm pushed towards Lodz, southwest of Warsaw, with a southern advance from Slovakia threatening Kracow. The double envelopment worked with appalling efficiency, particularly at Kutno, Radom and Warsaw, where the pair of

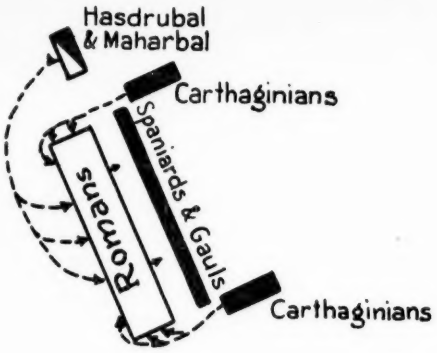
GENERAL MAP OF POLAND SHOWING LOCATION OF PLACES MENTIONED IN THE POLISH CAMPAIGN.

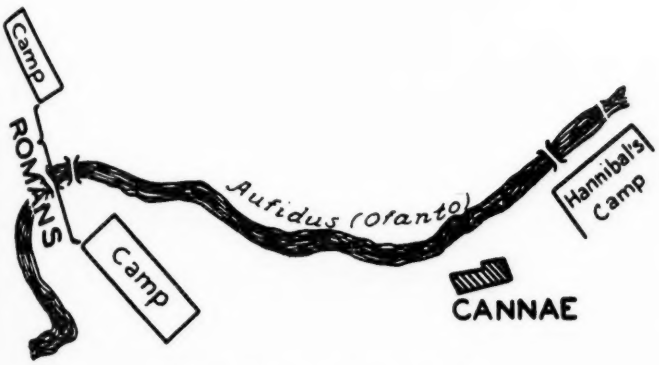
huge jaws successively closed, trapping thousands of Polish troops and capturing many guns and matériel.

The envelopment has always been the German classic. At Sedan in 1870 where out of 100,000 Frenchmen, 15,000 were killed and 80,000 made prisoners. At Tannenberg in 1914, against Russia, 30,000 fell in battle and 92,000 were made prisoners out of a force of 150,000 Russians. It almost succeeded in 1914. It won a *blitzkreig* in 1939 when it took the German military machine a little over three weeks to overrun Poland in one of the most rapid and overwhelming campaigns in history.

After the spring of 1939, when it was beginning to grow more evident that Poland would resist Germany, the Intelligence Bureau of the German Army set out to clarify the probable operations and intentions of Poland. From impressions obtained from Polish literature* and the daily

*See C&GSS Military Review, September 1939, page 42.





THE BATTLE OF CANNAE, 216 B.C.

press in connection with military measures taken by Polish Army leaders, the German General Staff drew the following conclusions:

(1) That Poland would fight.

(2) That Polish Army leadership underrated the German Army and held the belief that Poland could successfully conduct a war in the East, at least to a certain degree, as strong German forces would be needed to face France and Britain on the Western Front.

(3) That the Polish plan contemplated:

(a) Immediate occupation of the Free City of Danzig.

(b) An attack on East Prussia from three sides as follows:

(i) An attack from Augustow and Suwalki.

(ii) Another attack from Thorn and Graudenz. The two attacks mentioned above were to converge on Koenigsberg, completely avoiding the difficult lake terrain both in the west and in the east.

(iii) A holding attack from the south against East Prussia in the general direction: Warsaw—Koenigsberg.

The Poles believed that even if the German Army were able to break through Pomorze, it would still have to cross the Vistula, which is almost 3,000 feet wide with no bridges between Graudenz and Tczew, a distance of about 45 miles.

The Polish High Command also was convinced that the right flank of the German Army coming to the aid of East Prussia would be exposed to a Polish attack from the region of Bromberg, and also visualized the Posen center as a direct threat to Breslau and Berlin, separated by 30 and 95 miles, respectively, from the Polish frontier.

The Poles felt that they could defend successfully the Carpathian Mountains which reach an altitude of 7,500 feet in the Tatras, 5,200 feet in the western part and 3,900 feet in the east. They recognized the importance and vulnerability of the Jablunka Pass (1,650 feet) in the extreme west and of the Dukla Pass (1,500 feet) in the extreme east, where the Carpathians are comparatively easy to cross.

The railway net favored the defense along the Slovakian frontier, there being only one railroad and one motor road in Slovakia, while on the Polish side there were five railroad lines between Jablunka and Dukla, supplemented by several motor roads converging on the main railroad lines of Southern Poland. Furthermore, the Poles thought that they could launch an offensive on the Slovakian front, where the population was bitterly opposed to German rule.

THE OPPOSING FORCES

MILITARY REGIONS OF POLAND

Poland.

Poland was divided into ten military army corps areas, each corps consisting of three divisions and one regiment of corps artillery; one cavalry division in Warsaw and 11 independent cavalry brigades; 1 to 2 incomplete mechanized brigades; 2 army artillery regiments; 2 aviation groups with 6 reinforced regiments (about 300 reconnaissance planes, 300 bombers and 400 pursuit; few reserves).

The infantry division consisted of 3 infantry regiments and one regiment of light artillery. The cavalry division included 3 brigades of 2 cavalry regiments each, and 2 battalions of horse artillery. The separate cavalry brigade consisted of from 2 to 4 cavalry regiments and 1 battalion of horse artillery. In keeping with terrain conditions and Polish doctrines of war, there was a heavy preponderance of cavalry (272 squadrons) in the Polish Army. On the other hand, the army was weak in antiaircraft weapons, having only about 40 batteries.

On the Russian border there was a frontier corps and from 2 to 3 cavalry brigades, about 30,000 men in all.

Whether or not at the outbreak of hostilities each corps area contained a reserve division prepared for action is not certain, but it is estimated that Poland had between 40 and 60 divisions in the field.

In addition to the combat troops, the field armies had supply branches and other service troops. Trained reserves brought the total fighting strength of Poland to about 1,500,000 men. The Polish forces were under the supreme command of General Edward Smigly-Rydz, who had been a favorite of the late Marshal Pilsudski, and had distinguished himself in the battle of Warsaw in 1920, where the Soviets were decisively defeated.

Germany.

The strength of the German Army of invasion has been estimated at from 70 to 80 divisions, six of which were Panzer (mechanized), and four motorized. The equipment of the German divisions was excellent and modern in every respect.

Wide World Photo.

GENERAL WALTER VON BRAUTCHITSCH
Commander-in-Chief of the German Armies

The strength of the German infantry division was approximately 14,000 men, each division consisting of 3 infantry regiments, 4 battalions of field artillery (105-mm gun and 155-mm howitzer) and necessary service troops. The antitank and antiaircraft matériel of the German Army was of the highest quality and stood superior to that of their Polish adversaries in a ratio of at least three to one.

The Panzer division, approximate strength 11,000 men, had a reconnaissance echelon, a tank brigade (shock echelon), a motorized brigade (ground holding echelon) and the necessary auxiliary troops.

The German forces were under the command of Colonel General* Walter von Brautchitsch, who was fifty-eight years of age and the son of a cavalry general. Given the best education Berlin afforded, he became a lieutenant in the Royal Elizabeth Guard Grenadiers, at the age of 19, later transferring to an artillery regiment and rising to the rank of captain by 1914. After the war, despite the lull in German arms, he became successively a major, a lieutenant colonel and in 1930 director of military training for the Defense Ministry; 1931 saw him appointed a major general, and in 1932 he was made chief of artillery. He rose rapidly with the Nazi regime and in February 1938 was made Commander-in-Chief of the German Army succeeding Blomberg and Fritsch.

General Halder was his Chief of Staff.

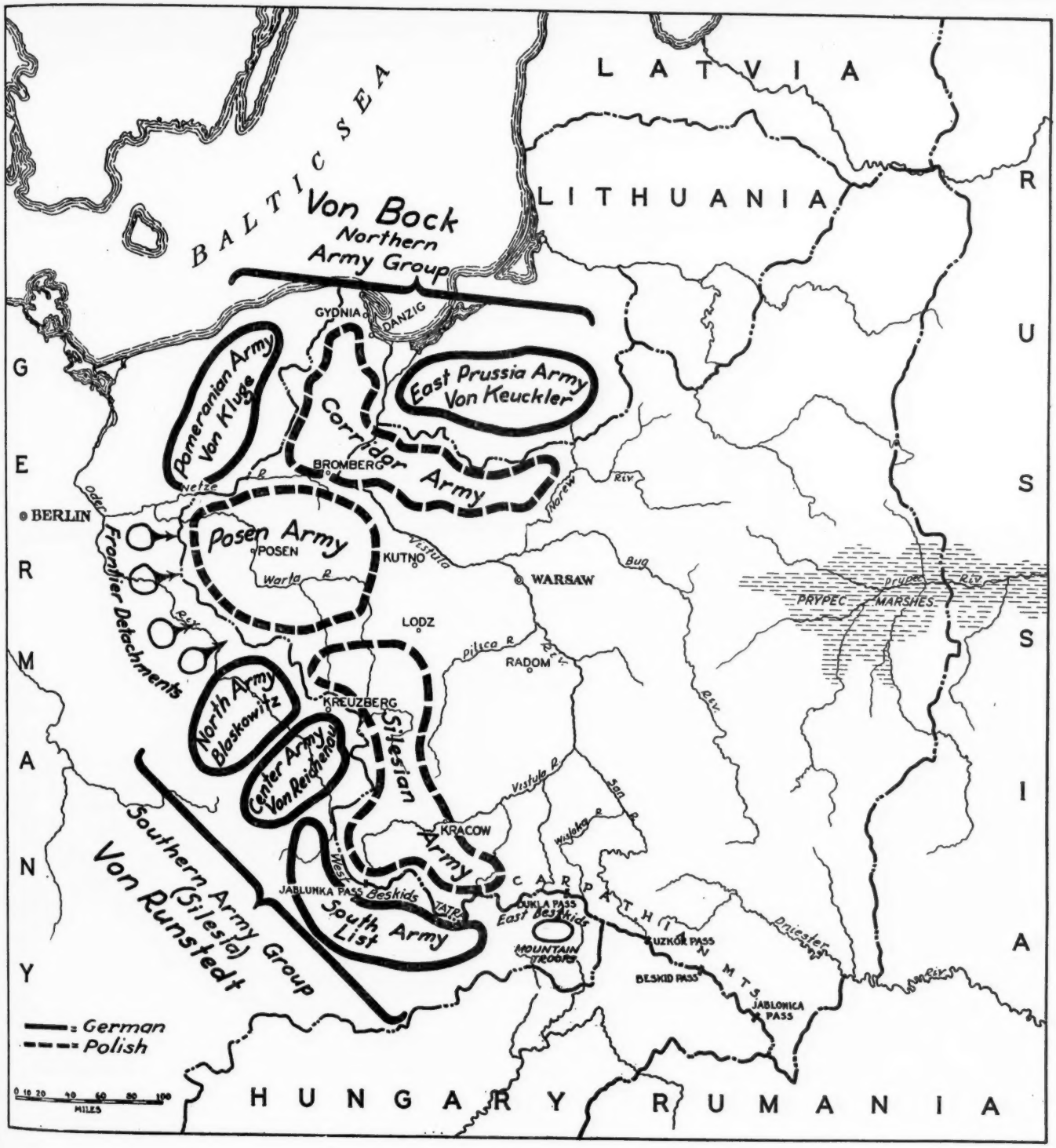
PLANS OF CAMPAIGN

Poland

The Polish war plans, before the annexation of Czechoslovakia by Germany, were generally believed to envisage, on the part of Poland, defensive operations in Upper Silesia and in the Corridor, but offensive movements directed primarily against Central Silesia (Breslau), and secondarily against Berlin. The Polish provincial capital of Posen is only two hours by rail from the German capital; however, on the German side of the frontier the countryside, intersected by many river and canal beds, is easily defensible, and in addition, this region had been strongly fortified. These war plans, however, were based upon the assumption of the existence of a strong and well-defended Czechoslovakia which, in alliance with Poland and France, would, on her part, take the offensive against German Silesia to join the Polish forces there.

These plans became useless after the partition of Czechoslovakia and had to be hastily revised. It has been said by some military commentators that the new Polish plans envisaged a generally defensive attitude on the part of the Poles with the chief object of keeping the Polish fighting forces intact and temporarily evacuating large portions of Polish territory. The main defensive positions were supposed to be, first, along the line of fortified cities: Kutno—Lodz—Random—Kracow; the second and strongest on the line of the rivers Narew, Bug, Vistula and San, to which the armies were to fall back delaying the German advance and delivering sharp counterattacks as the opportunity offered. Meanwhile, Polish reserve divisions were to assemble behind the last named line, especially those drawn from East Poland

*The rank of Colonel General is equivalent to second rank Field Marshal in the British Army.



CONCENTRATION AREAS OF GERMAN AND POLISH ARMIES.

whose mobilization, because of poor communication facilities, took considerably longer than those from the more thickly populated districts in the west.

In the light of events, it must be admitted, unless disproved by evidence, that the Polish plan must have contemplated offensive action, as the Germans claim. This is supported by the fact that Poland concentrated her armies far forward, that the Corridor Army and the Posen Army, in particular, were stronger than the Silesian Army and that the newly created Fourth Army was partly concentrated in the north near Grodno on the East Prussian border. A large number of troops were massed in the Corridor and in the early encounters Polish cavalry penetrated German territory near Breslau and also in East Prussia. It is only by assuming offensive rather than defensive action that the Polish initial strategical concentration can be explained.

In order to carry out their plans, the Polish concentrated their forces as follows: (See Concentration Map.)

(1) One Polish army was stationed in the area north of Warsaw, capable of checking or threatening a German advance from East Prussia against Warsaw. This army was protected on the right by the forces that were intended to attack East Prussia from an eastern direction and on the left by a strong army in the Corridor. The mission of this Corridor Army was to occupy the Free City of Danzig and to launch an offensive against East Prussia from the west.

(2) The Polish Army in the region of Posen had the mission of covering the rear of the Corridor Army in the operation outlined above. In case of a German attack against the Corridor Army, the Posen Army was to threaten the German flank and it could also be used to reinforce the southern Polish Army, if necessary. Due to its central location, the Posen Army could threaten the flanks of any German attack from Central Upper Silesia or from Pomerania.

(3) Poland's Southern Army, the weakest of the three, concentrated in the region of Kracow and Lemberg, and was in the opinion of Polish Army leaders, strong enough to protect the important industrial area: Kracow—Lublin—Lemberg.

Germany

The German plan of campaign was, as it has been already stated, the classic double envelopment, with a powerful drive from Silesia on Warsaw and another from East Prussia across the Narew and Bug, both pincers to close east of Warsaw. The initial concentration and disposition of Polish troops was well known to the German High Command, thus materially assisting the successful accomplishment of this plan.

General von Brautchitsch created two army groups as follows: (See Concentration Map)

(1) *Southern Group* (the strongest): Colonel General Karl von Rundstedt, commanding; Lieutenant General Mausein, Chief of Staff.

a. South Army (right wing):
General List, commanding.

b. Center Army (main effort):
Artillery General Hans von Reichenau, commanding.

c. North Army (left wing):
Infantry General Johannes Blaskowitz, a Sudeten German, who rose through the ranks, commanding.

(2) *Northern Group:* General Oberst von Bock, commanding; Lieutenant General Salmuth, Chief of Staff.

a. Pomeranian Army:
Artillery General Guenther von Kluge, commanding.

b. East Prussian Army (10-12 divisions):
General von Keuchler, commanding.

The German center connecting the two army groups was weakly held by frontier detachments, their mission was to pin down as many Polish divisions as possible, the retreat of which was to be cut off by the strong, swift moving wings.

The goal of the German Army was the *swift defeat of the Polish Army.* To accomplish this the German High Command decided to strike several rapid blows at vital parts on the front which measured 1300 miles all told and so to anticipate any large scale offensive by the Polish Army. The execution of this plan was aided materially by the annexation of Czechoslovakia, which enabled the German High Command to shift the right wing of von Rundstedt's Group into the Tatra and from there to launch an offensive in a northerly direction across the mountains.

The mission entrusted to the Southern Army Group was to push in a northeasterly direction toward the Vistula from near Kreuzberg with the center army (von Reichenau) which was to make the main effort. General List's Army from Silesia was to protect the right flank of the center army, cross the West Beskids Mountains by forcing the Jablunka Pass and advance in an easterly direction. Its orders were to hold the Polish forces there and, with the units advancing from Slovakia northward, encircle the Poles and prevent, if possible, a Polish retreat eastward.

General Blaskowitz' Army which, advancing from east of Breslau was to drive in the general direction of Warsaw protecting the left of the center army from expected flank attacks by the Polish Posen Army.

The mission of the Northern Army Group was to drive with General von Kluge's Army (Pomeranian Army) across the Corridor and establish contact with East Prussia as quickly as possible; then cross the Vistula between Bromberg and Graudenz and together with the forces advancing toward Graudenz from East Prussia, contact the north wing of the Southern Army Group (Blaskowitz) and advance in a general easterly direction.

The Second Army of General von Bock's Group (East Prussia), under the command of General von Keuchler, was given the mission of advancing from East Prussia over the Narew and the Bug, east of the Vistula, thus establishing connection with General von Reichenau's Army (Center Army, Southern Group) and cutting off Warsaw from the east. This army would extend its operations farther to the south in an effort to capture, with an encircling movement behind the Save and the Bug, those Polish forces that might succeed in crossing the Vistula.

BLITZKREIG

Germany commenced the war in the east early on the morning of 1 September. From East Prussia she launched an assault southward. She did not dispose of more than ten to twelve divisions in this isolated territory, and their attack by itself would have been fruitless. But, simultaneously, she thrust across the Corridor from Pomerania, overran it, opened up land communication with East Prussia, and continued the drive in the direction of Warsaw. The Posen salient was neglected; indeed, the Poles won a local success in this quarter, and reached for a moment the soil of the Reich. From the direction of Silesia came the main blow, in which most of her motorized and mechanized divisions were employed with terrific effect. Farther south still, from Slovakia, she thrust into Polish Silesia, that area of coal and iron, of intense industry, which contained the life-blood of Poland. This thrust was accompanied by another across the Beskid and Tatra ranges of the Carpathians.

The concentric attack might have been met with only a measure of success by a mobile and determined defense, but for one factor—the power of her air forces. They not only

enabled the German ground forces to move with complete freedom, but also blinded and crippled the Polish. Communications were shattered by constant bombing; counter-attacks were detected in assembly areas and broken up before they could develop; all Polish troop movements had to be confined to the hours of darkness. Polish artillery was instantly engaged by German, ranged by aircraft, whereas German battery positions could not be identified. Low-flying airplanes, using machine guns as well as bombs, preceded and covered the advance of fighting vehicles and of infantry. Back-area bombing spread disorganization in the rear. The Germans made tremendous use of aircraft operating in conjunction with mechanized and motorized units. Their swift and effective action disorganized the Poles, who were harassed from morning till night by this immensely superior and highly efficient force; consequently, they were unable to recover and reestablish successive defensive positions.

The concentric advance on Warsaw was followed by an advance of great strength, in the general direction of Lemberg. Various reasons have been put forward to explain this: that the objective was economic, namely, oil; that it was military, to cut off Poland from Rumania; that it was economic, military and political, to establish contact with Russia.

The course of the German offensive beginning 1 September reveals five separate main operations.

(1) In the south, the advance of the extreme right (List) across the Carpathian Mountains, advancing in the direction of the New Sandez—Tarnow railroad.

(2) North of that region, the envelopment of the industrial district of Upper Silesia, with the advance aimed at Kracow (von Reichenau).

(3) From Silesia, the drive past Lodz on Cestochowa and Warsaw (Blaskowitz).

(4) In the north and east, the occupation of the Corridor by invasions from Pomerania and East Prussia.

(5) From East Prussia, the push in a southerly direction toward the Narew, by way of Mlawa and Przasnysz.

The defense of the Free City of Danzig was left entirely to locally organized guards, who occupied the Polish post office where the Poles put up some resistance.

The German Navy closed the Bay of Danzig and in the early days of September destroyed what was left of the small Polish fleet: four submarines, a destroyer and a mine planter. Three Polish destroyers had fled to England in the closing days of August. The Navy and Air Force bombed the Polish naval bases of Gydnia and Hela and erected mine barriers in vital locations. The Polish garrison at Westerplatte surrendered on 7 September after an attack by the landing forces of the training ship Schleswig-Holstein, reinforced by a battalion of engineers.

In this fast war of movement there never was a continuous battle front. The Germans launched their attacks in mass, smashing forward as far as possible, troubling themselves not at all with the pocket which they left in the intervals between their columns. Mechanized and motorized divisions smashed relentlessly forward, crushing resistance or simply passing it by. Thus the Polish centers of resistance became mere isolated islands. So it was at Posen, for example, where in the so-called "Posen sack," 10 Polish divisions were trapped. The Germans did not overcome the salient immediately, but depended upon their enveloping tactics, assuming that it would be disastrous for the Polish Army to be caught around Posen with its retreat cut off. The character of this rapid, crushing German advance can be better understood by a study of the operations as they developed, day by day.

PROBABLE DISPOSITIONS OF THE POLISH ARMY, 1 SEPTEMBER, 1939.

THE SILESIAN GROUP

1 September

By the evening of 1 September the extreme right wing of this group (List) had reached the line: Neumark—Sucha and crossed the Olsa at Tesin. Farther north, other units skirted the industrial region of Upper Silesia and advanced on Czestochowa.

2 September.

Units of this group pushed on through Jablunka Pass, in the Beskids and seized Pless. North of the industrial region the German forces gained the banks of the Warta after taking Wielun. Simultaneously, in the country north of Czestochowa, mechanized units drove toward Radomsk, while other elements, advancing by way of Kepno, moved on Sieradz.

3 September.

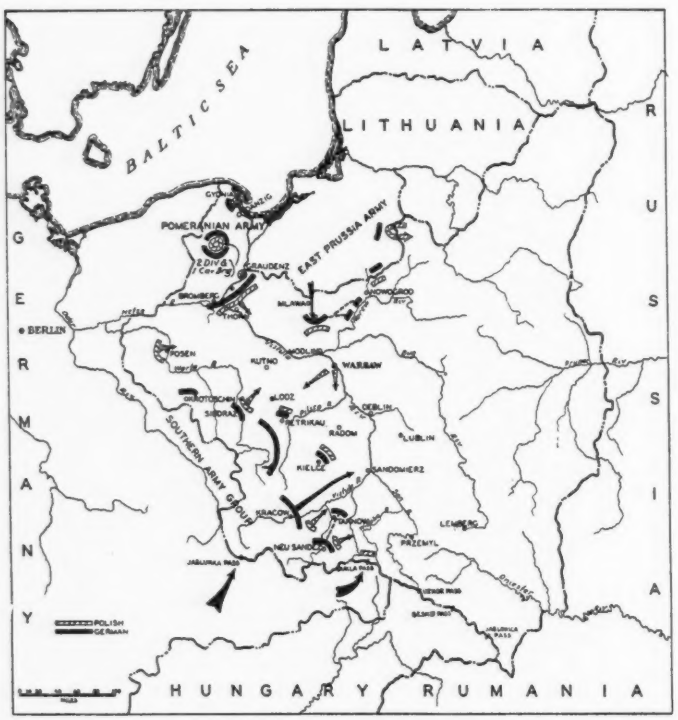
This day marks the forced crossing of the Vistula east of Pless, the overrunning of Polish fortifications south of Nikolei, the capture of Czestochowa, the crossing of the Warta at points east of Wielun and the occupation of Radomsk.

4 September.

According to German reports, the Polish 7th Division was destroyed southeast of Czestochowa and its commander, General Gosiovowski and staff taken prisoners. The German forces fought their way across the Warta and captured Ostrowo, Krotoszin and Lisa. The right wing of the Silesian Group continued the pursuit of the Polish forces in the direction of Kracow.

5 September.

The German troops drove the Poles from the northern exit of the Beskids. With the capture of Katowice, Konigshutto and Tarnow, the industrial region of Polish Upper Silesia was in German hands. While to the north, the advance reached the line: Checiny—Petrikau, the attack east of the Warta continued in the direction of Lodz. The Polish Government fled from Warsaw to Lublin.



ENVELOPMENT PHASE—SITUATION AS OF 6 SEPTEMBER

6 September.

Units of the Silesian Group entered Kracow without encountering resistance. In the north, the Germans took Kielce, and in the south they occupied Neu Sandez.

7 September.

The German advance kept close upon the heels of the defeated Poles in the region southeast of Gorlice and east of Tarnow, penetrating as far as the Wisloka; they also gained ground in the Lisa Cora range north of Kielce. North of Tomaszow, mechanized forces drove the Poles out of Rawa Mazowiecka, and advanced to within less than 40 miles from Warsaw.

THE POMERANIAN ARMY

Supported by the East Prussian Army, the mission of the Pomeranian Army was to establish direct contact with East Prussia. Instead of driving directly on Danzig, which was the shortest route, General von Kluge directed his main effort in the general direction on the line: Bromberg—Kulm —Graudenz.

1 September.

German troops reached the Netze River at Nakel and closed in on the Brahe. Meanwhile, the East Prussian forces launched an attack from Marienburg on the Polish fortified area of Graudenz.

2 September.

On this day, the Pomeranian Army crossed the Brahe. A powerful mechanized attack carried the advance elements to the Vistula at points south of Graudenz, northwards toward Tuchel.

4 September.

The Pomeranian Army reached the Vistula at Kulm, forcing its way across the Brahe. This advance prevented the Polish troops in the northern part of the Corridor from retiring to the south. All Polish efforts to shatter the iron ring by desperate individual action proved futile.

The Pomeranian Army forced the crossing of the Vistula at Kulm and continued to advance along the east bank of the river. Simultaneously, units of the East Prussian Army captured Graudenz. Tczew also fell into German hands that day.

5 September.

The Polish forces, under the pressure of the German units that had crossed the Vistula at Kulm and Graudenz, evacuated Bromberg.

6 September.

The Pomeranian Army concluded the mopping up of the region around Tuchel and according to German reports, wiped out the Polish 9th and 27th Divisions, a mechanized battalion, two battalions of light infantry and the "Pomorzka" Cavalry Brigade.

Continuing their drive to the east of the Vistula, the German forces crossed the Thorn-Strassburg highway.

7 September.

The Polish Posen Army commenced the evacuation of the Province of Posen. German troops occupied Wagrowice and Oborniki, north of Posen, and Kozmin at the south. The invasion of the Province of Posen from the west likewise gained ground forcing the Poles to withdraw farther and farther to the east.

THE EAST PRUSSIAN ARMY

1-4 September.

The left wing of this army advanced to the south driving deep into Polish territory. By 4 September this army had

pushed on past Mlawa and Przasniz and after heavy fighting broke through to the Narew.

5-7 September.

The German forces occupied Ciechanow, whence they drove toward the Vistula in the direction of Plonsk. They gained the Narew first at Rozan, next at Pultusk and later at Ostroleka and Lomza. By 7 September the German forces had crossed this important obstacle. Polish cavalry conducted raids against the left flank of the German forces and even penetrated East Prussian territory at one point, but this threat was too weak to halt the German advance.

8 September.

At the beginning of the second week of operations, the German armies in the East were making rapid advances all along the front.

While the right wing of the Silesian Group (List) was nearing the San, the left wing (Blaskowitz) advancing south of Lodz had reached to within 10 miles of Warsaw. In the afternoon of 8 September a German mechanized division entered the suburbs of Warsaw.

In the Province of Posen, the Polish forces were retreating eastward closely pursued by German troops.

In the northern part of the Corridor, units of the Pomeranian Army shifted to the attack on Gdynia, after mopping up the region of Tuchel.

A Polish cavalry attack against the extreme left of the East Prussian Army was broken up by the German air forces and in no wise interfered with the continuation of the German advance to the south.

By this time, the industrial region of Poland, where her munition bases and industrial centers were located, were in German hands and this had a decisive effect upon the subsequent operations.

9 September.

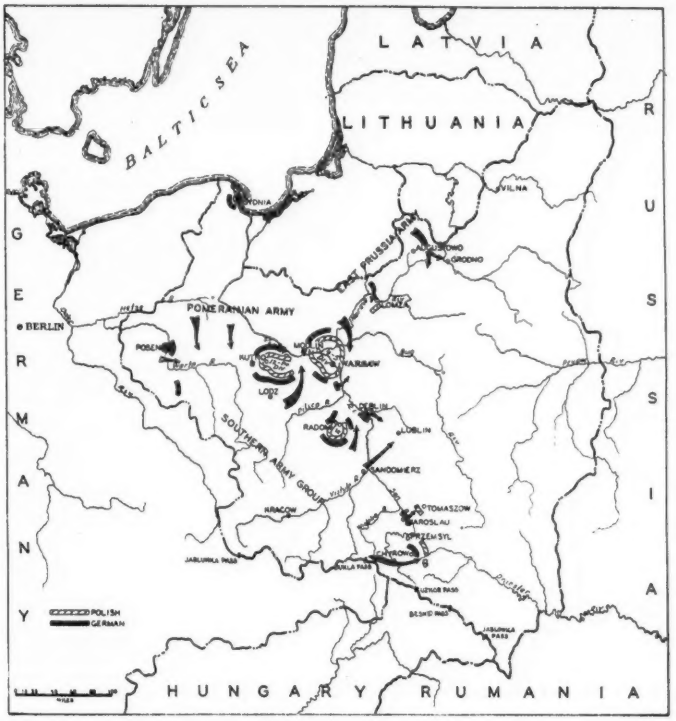
The motorized units of the Silesian Group reached Rzeszow on the Wisloka and proceeded to Jaroslau. German troops reached the Vistula and Sandomierz, captured Zwolen and Radomsk, while farther north the German advance had reached Gora Kalwarja on the Vistula. While units in rear of the Silesian Group occupied Lodz, the main body of the left wing (Blaskowitz) pushed on astride the city in pursuit of the Polish forces that were slowly retreating to the east.

10 September.

The Polish troops in the south retired across the San. Simultaneously, German troops forced the river crossing in the Sanok-Jawornick sector as well as at Radynna and Jaroslau. In the meanwhile the investment of from four to five divisions in the Radom area between Kielce and the Pilica and Vistula Rivers made further progress. Attempts on the part of the encircled Poles to break the German iron ring failed. A thrust by German mechanized units blocked the retreat of another group of Polish forces which was falling back on Warsaw.

11 September.

While the great battle in the area west of Warsaw continued unabated, the German forces in South Poland reached



COMMENCEMENT OF ANNIHILATION PHASE—SITUATION AS OF 11 SEPTEMBER

the San by forced marches and crossed the river. German mountain units on the extreme southern flank captured Chypew, south of Przemysl.

In the zone of operations between Lodz and Warsaw, several Polish divisions made a desperate attempt to escape the encirclement by breaking through to the east. All their efforts failed.

Other Polish forces, after withdrawing from the Province of Posen and the area: Bromberg—Thorn were now confronted by units of the Silesian, Pomeranian and East Prussian Armies around Kutno. They likewise tried in vain to escape to the south. The five Polish divisions and two cavalry brigades encircled in that area found their retreat hopelessly blocked.

12 September.

The German forces of the southern wing continued the swift pursuit. Attacking astride Przemysl, German mountain units captured Sambor and Jaworow. While mechanized elements occupied Crocowice, a town located northeast of Przemysl, strong forces in the region east and southeast of Warsaw crossed the Warsaw—Siedlce highway and railway.

13 September.

The German forces made further important gains. Mechanized and motorized forces in East Poland made rapid advances in the area north of Lemberg and reached the Lublin highway at Rawa Ruska and Tomaszow. On the front farther north, the Polish divisions encircled at Kutno made another attempt to break through the German lines in conjunction with a Polish thrust from the direction of Warsaw, but these efforts failed. Meanwhile the German

forces attacking Warsaw were about ready to join hands with the units that had crossed the Vistula south of the Polish capital. The battle of annihilation in the Radom area had netted 60,000 prisoners including several Polish generals and 143 guns of various calibers and 38 tanks.

14 September.

The strong Polish forces surrounded at Kutno made another desperate but unsuccessful attempt in a southeasterly direction to break through the German ring.

The German forces east of the Vistula were closing in on Prague, a suburb of Warsaw, from the north, east and southeast. There, too, they defeated all Polish efforts to escape to the east.

15 September.

The German troops continued their rapid advance, the pursuit of the Polish units in East Galicia and Wollynia also continued at an undiminished pace.

Two German divisions crossed the San on the 15th. These were the same units which in the early days of the advance had broken through the Polish lines of fortification in the industrial region of Upper Silesia; they were now following the mechanized units by forced marches for the purpose of wiping out the remnants of Polish resistance on the southeastern front. The Polish Silesian Army had now ceased to function as a coherent unit. The fortress of Przemysl, South Poland's mightiest bulwark, fell into German hands and motorized units occupied Wlodzmiers, a town far to the east.

16 September.

Lemberg was now enveloped on three sides and the Polish forces in the area between Lemberg and Przemysl were cut off from a retreat to the southeast. German units in the region north of the mouth of the San pushed on in the direction of Lublin and captured Deblin, where 110 planes were taken. Deblin was occupied the following day.

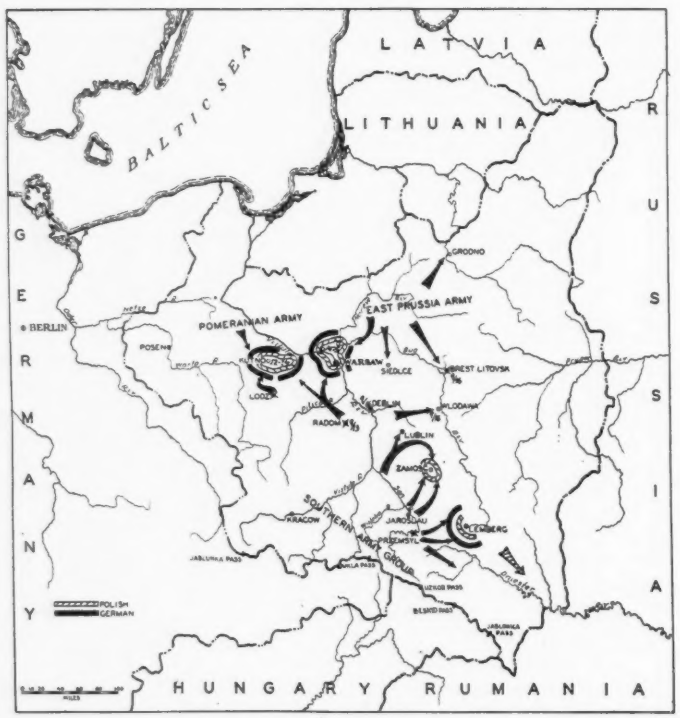
The reconnaissance units of the East Prussian, Upper Silesian and Slovakian troops joined hands at Wlodawa, a town south of Brest-Litovsk.

German forces seized Kutno and then headed north. Warsaw was closely surrounded. The German air forces conducted repeated raids on Polish troop concentrations and marching columns in the region east of the Vistula, thus preventing the Poles from reorganizing. The radio stations of Wilna and Baranowicze were destroyed by air raids. German forces captured the citadel of Brest-Litovsk.

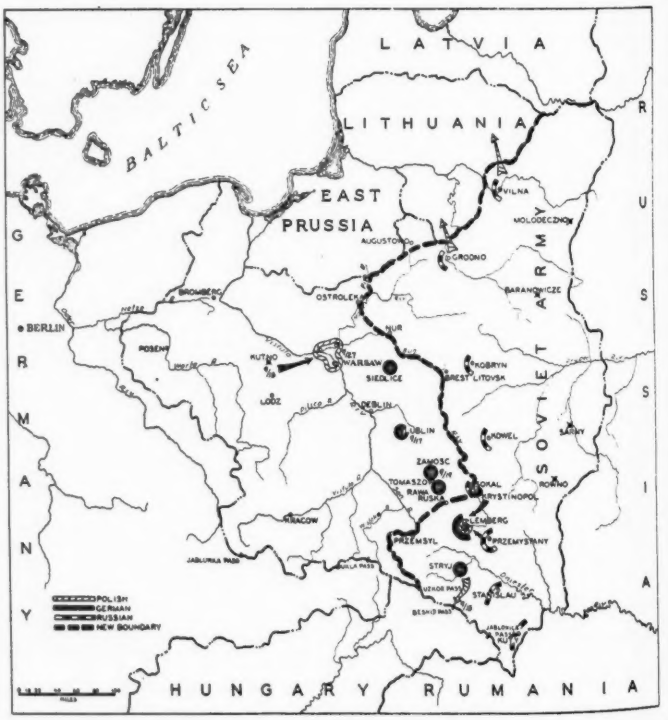
17 September.

On the night 16-17 September, the Soviet Government handed the Polish Ambassador in Moscow a note informing him that the Soviet Government was compelled "in order to safeguard its own interests and to protect the White Russians and Ukranian minorities in East Poland—to order the Red Army to cross the Soviet-Polish border at 6:00 A.M., 17 September, Moscow time." As announced in the note, the Red Army took up the advance simultaneously along the entire frontier from Polosk in the north to Kamenec-Podolski in the south.

On 20 September, the Russian troops, after weak resistance by three Polish divisions, 2 to 3 cavalry brigades and border detachments, reached the line: Wilna—Grodno—Kobryn—Kowel—Stanislau. On the 22d Russian troops moved into Lemberg, whence the German troops were withdrawn. The Polish forces laid down their arms (120,000 men). The Russian invasion has been called the "knock-out blow," that rudely changed the aspect of that war, but it



ANNIHILATION PHASE—SITUATION AS OF 16 SEPTEMBER 1939



COMPLETION OF ANNIHILATION PHASE
SITUATION AS OF 21 SEPTEMBER 1939

is a fact that Poland's Army was disorganized and collapsing before a single Red soldier had stepped into Polish territory.

On 21 September the line of demarcation shown on sketch went into effect.

The war in Poland was practically brought to an end on 20 September, although Warsaw held out under heavy artillery and air bombardment until 27 September when it surrendered unconditionally. German troops delayed formal occupation of the city until 5 October. Modlin, the Poles' last fortress, yielded to German siege on the 28th.

THE POLISH CAMPAIGN

Few campaigns have begun with such overwhelming immediate advantages as those possessed by Germany when she launched her Blitzkrieg on Poland on 1 September. Time, strategic situation, matériel and numbers were all on her side. Time, because the Siegfried Line freed her from the risk of any serious ground attack on the west for a considerable period. She was fully mobilized, while the Polish forces in East Poland were not, although those in the western part of the country were.

The strategic situation for Germany's invasion of Poland was ideal, all was cut and dried for her favorite strategy of envelopment. In this she was greatly assisted by the initial concentration of the Polish armies: a strong center well forward with weak flanks, the ideal setup for a Cannae. To the south she outflanked Poland from Slovakia and Silesia, to the north from East Prussia. From the west she was faced by huge open plains, ideal for the movement of cross-country vehicles. Even the weather was on her side, for the summer had been unusually dry, so that the roads, few and poor as they are, were at their best for the purpose of withstanding heavy traffic.

In matériel, she disposed of a superiority of probably more than four to one in aircraft; she had an enormous superiority in mechanized forces and a considerable superiority in artillery—both in quality and quantity. In actual numbers, her strength was perhaps less than three to two, hardly sufficient to command success against a brave opponent, had other things been equal. But other things were not equal, for the German forces were superior not only in strength, but also in training, equipment and leadership.

THE WAR IN THE AIR

On 1 March 1935, Hitler, by official decree, organized the Army of the Air. The Reich was, more recently, divided into four air commands as follows:

1. Air Fleet No. 1, facing Poland.
2. Air Fleet No. 2, oriented towards Netherlands, Belgium and England.
3. Air Fleet No. 3, oriented towards the French and Swiss frontier.
4. Air Fleet No. 4, recently organized, oriented towards the southeast.

Marshal Goering was appointed Commander in Chief of the Air Force with Major General Jeschonneck as his Chief of Staff.

TERRITORIAL ORGANIZATION OF THE GERMAN AIR FORCE.

Air Fleets Nos. 1 and 4, commanded by Generals Kisserlring and Loher, respectively, conducted the bulk of air operations in Poland, their mission being the destruction of the Polish air fleet and cooperation with the ground forces.

The German advance was helped tremendously by their superiority in the air; in fact, it may be said that the factor which told most heavily against a Polish stand was that of the air. German reinforcements could be brought up without fear of decimation by Polish bombers. The retreating Poles could be harassed, their communications cut, their bridges destroyed and their nerves kept constantly on edge, even when resting behind the lines. Ground strafing, the low bombing and machine gunning of troops, had great telling effects on the retreating Poles.

The preliminary surprise bombing of the Polish airdromes such as Tczew, Graudenz, Mlwa, Katowice, Kracow, Wilna, was devastating in its effects. Polish losses in the air became serious and by the end of the first week of war, the need for reinforcements became urgent. The Polish airplanes were greatly outnumbered and the Germans gained command of the air from the very first day of the war and from then on it was just like a blind man fighting a man with perfect eyesight. The result was that the Poles were unable to locate concentrations of German troops moving up to attack while the Germans were able to bomb every concentration of Polish troops. The systematic bombing of railway stations, road junctions, roads and bridges, hampered very much the mobility of the Polish forces, never good in a country of relatively poor communications. The repeated attacks against Polish air bases, military installations, munitions plants and the efficient cooperation with the ground forces played a decisive part in the demoralization of the opponent and in the weakening of his strength. The Germans operated from captured Polish airdromes, so that they could take off with big loads of bombs and little fuel and return quickly to rebomb and refuel.

As the war progressed and Polish losses increased, the German superiority in the air became more and more complete. This led to the paralysis of organized Polish resistance. The chains of command, of supply and of communication were snapped, so that the defense became sporadic and uncoordinated.

Once the Poles were driven from the air, their cause was hopeless, and it may be asserted that the remarkable success of the German forces would have been impossible without the splendid support given them by the air force.

By itself, control of the air cannot decide a war, but it can enable an army to win a quick decision. The campaign in Poland has confirmed the lessons learned from the wars in Spain and China, namely, that the air weapon is one of the most essential adjuncts in modern warfare.

Causes of the Polish Collapse

The reasons for the Polish collapse may be summed up as follows:

1. The Polish High Command underrated the German Army and erred in the belief that the Polish forces could conduct successfully an offensive war in the East—at least to a certain degree—in consideration of the strong German forces that would have to be retained on the Western Front.

2. Faulty Polish initial concentration as a result of an erroneous estimate of the situation. The battlefield is simply the execution of a preconceived plan.

3. Superiority of the German Air Force in numbers and efficiency.

4. Overwhelming German preponderance of mechanized and motorized forces.

5. Insufficient equipment on the part of Poland.

The Polish Army, consisting principally of cavalry and infantry, organized and equipped in World War style, faced a highly mechanized, modern Reich war machine. The Poles did not have adequate antitank guns or other satisfactory defense against the German Panzer divisions, and the German tanks, supported by infantry, rolled through a perfect demonstration of a "blitzkrieg."

6. Lack of adequate Polish antiaircraft defense system.

7. Perfect cooperation between mechanized and motorized units and aircraft which was a feature of the German victory.

8. Failure of the Polish engineers to erect obstacles and coordinate the work of demolition of roads and bridges. The passes over the Western Carpathians afforded excellent opportunities to the engineers; yet, the attacking forces operating from Slovakia negotiated them very quickly. This thrust had disastrous consequences for the Poles. Their industrial area of Katowice, which they were defending against a German drive from the West was taken in rear by the advance across the Carpathians and their old capitol of Kracow had to be abandoned almost without fighting.

9. Collapse of radio communication.

The German information service proved to be very able. The position of the Polish G.H.Q. was constantly known to the Germans and consequently bombed from pillar to post.

10. Ability of attackers to concentrate in overwhelming numbers at three different points: Silesia, the Corridor and East Prussia, while the defenders attempted to cover the whole front. The bulk of the Polish Army was never effectively engaged at all.

11. Weather conditions—persistently fine—which was an immense help to aircraft action and an even greater help to the action of the German mechanized detachments which were pushed forward with the greatest vigor.

12. Lack of proper organization of Polish defensive or delaying positions and slow mobilization of Polish forces.

Conclusion

The Polish campaign will go down in history as one of the most brilliant campaigns of all times. In the incredibly short period of three weeks the military destruction of a nation of 30,000,000 people, defended by an army of 1,500,000 men was completed. This tremendous achievement bids fair to revolutionize many concepts of warfare. Never had large military units, even in peace time, moved so fast. The speed of the German Army was paralyzing, shattering all previous forecasts.

It showed, among other things, the efficiency of well trained and well led mechanized forces in a war of movement and it also proved that an army, no matter how brave, organized along World War lines of 1914 is no match for a modern army of 1939.

The remarkable success of the German armies was due to the sound strategic conception upon which the German concentration was based, the expert employment of units—particularly the air forces and the mechanized forces—and the quick exploitation of the advantages offered by the initial situation

The quality of the individual soldier still is, and will ever be, a factor of the highest importance; but, under identical conditions, the weight of destructive armament decides the issue. The plane, the tank, mobile artillery and motorized infantry have made the modern army fast and deadly.

Infantry, cavalry and the air force must operate together if an army ever hopes to develop the smooth technique and efficiency of which the German Army gave such an impressive demonstration on the battlefields of Poland.

THE WESTERN FRONT

Since the outbreak of hostilities (3 September) between Germany and the Allies—England and France—there have been no engagements of major importance. During the early days of September there was some fighting at Lauterbourg and at Saarbrucken, capital of the important industrial province of the Saar. A few experimental raids have been made by the British and the Germans against each other's naval bases. The submarine warfare against commerce has been active and a number of daring exploits have occurred, such as the sinking of the Royal Oak at Scapa Flow and the bombing of the German base at Wilhelmshaven. However, the main activities up to the present time have consisted of extensive preparations, diplomatic parleys and propaganda by both belligerents.

The armies have been mobilized along the Maginot and Siegfried lines; the British have transported safely across the Channel a powerful expeditionary force, while the Germans have brought heavy reinforcements from Poland.

Wide World Photo.

BRITISH BABY TANKS PASSING THROUGH A VILLAGE BEHIND THE LINES SOMEWHERE ON THE WESTERN FRONT.

That is all. The French made some gains into German territory during the first two weeks of the war; however they have given up the ground gained and returned to their original positions.

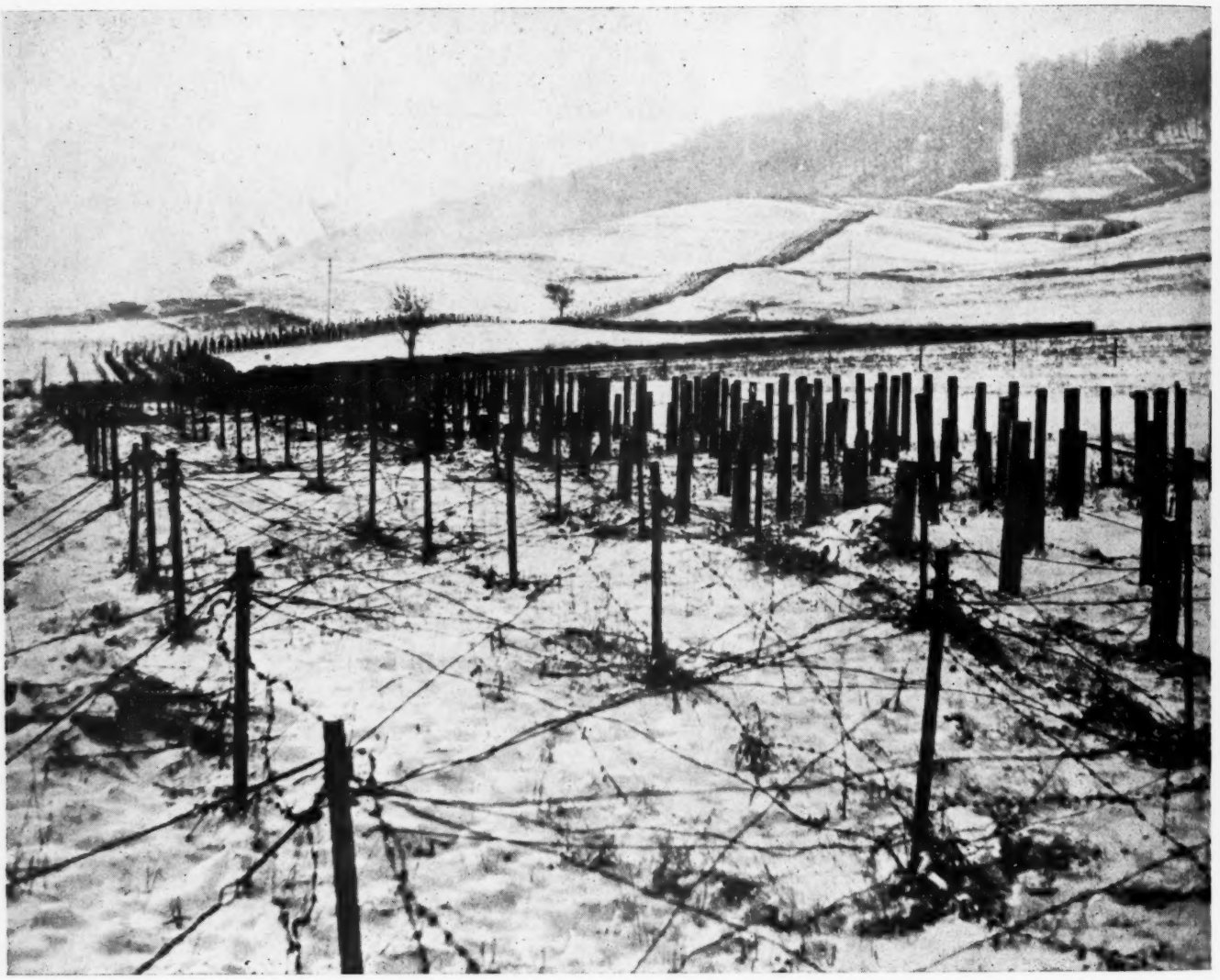
The war in the west has had none of the aspects of the "blitzkrieg." As yet, no cities have been bombed on either side; no attempts have been made to demoralize the enemy by an overwhelming attack capable of paralyzing both the armies and the civilian population. Nothing has happened on the Western Front that resembles the great battles of the World War. The reason for this inaction is apparently that both sides know the great defensive strength of their positions.

In order to have a clear conception of possible eventualities, a study should be made of the military leaders of the three powers and the impregnability of the famed Siegfried and Maginot Lines.

The combined English and French Armies on the Western Front are under the Supreme Command of 66-year old Generalissimo Marie Gustave Gamelin, a master strategist, scion of a family identified with the army for generations. Educated at the College of Stanislaus, cradle of many French generals, he received a commission in the infantry. He served three years in North Africa, returning to gain admission to the Staff College, where he became a pupil of the late Marshal Foch. He served under Joffre when the latter became Commander in Chief of the French Army in 1911.

Then came 1914 and the unexpected thrust of the Germans through Belgium in accordance with the Schlieffen Plan which upset the prearranged plans of French military leaders; saw the retreat of the French Armies almost to the gates of Paris. Gamelin convinced Joffre that the time had come to stop the retreat and attack the exposed right flank of the German Army. This resulted in the Battle of the Marne which saw the German Armies in full retreat.

In June 1915, Gamelin became G-3 of French G.H.Q. and at the end of the year, at the age of 44, Joffre made him Chief of Staff. Later he became division commander when Joffre was relieved of command. He served in Brazil as head of the French military mission, from where he was recalled in 1927 and promoted to command a corps. Four year later he became Chief of Staff of the army and as such superintended the construction of the Maginot Line and the modernization of the French Army. In January 1938,



Wide World Photo.

MAGINOT LINE SHOWING SEEMINGLY ENDLESS ZIG-ZAGGING STRETCHES OF BARBED WIRE ENTANGLEMENTS AND UP-ENDED STEEL RAILS.

he was given the newly created position of Chief of the General Staff of National Defense, carrying with it the responsibility of combined operations of the army, navy and air forces.

Viscount Gort, Commander in Chief of the British field forces, a descendant of an old army family, has 800 years of tradition behind him. He has spent 34 of his 53 years of life in the military service.

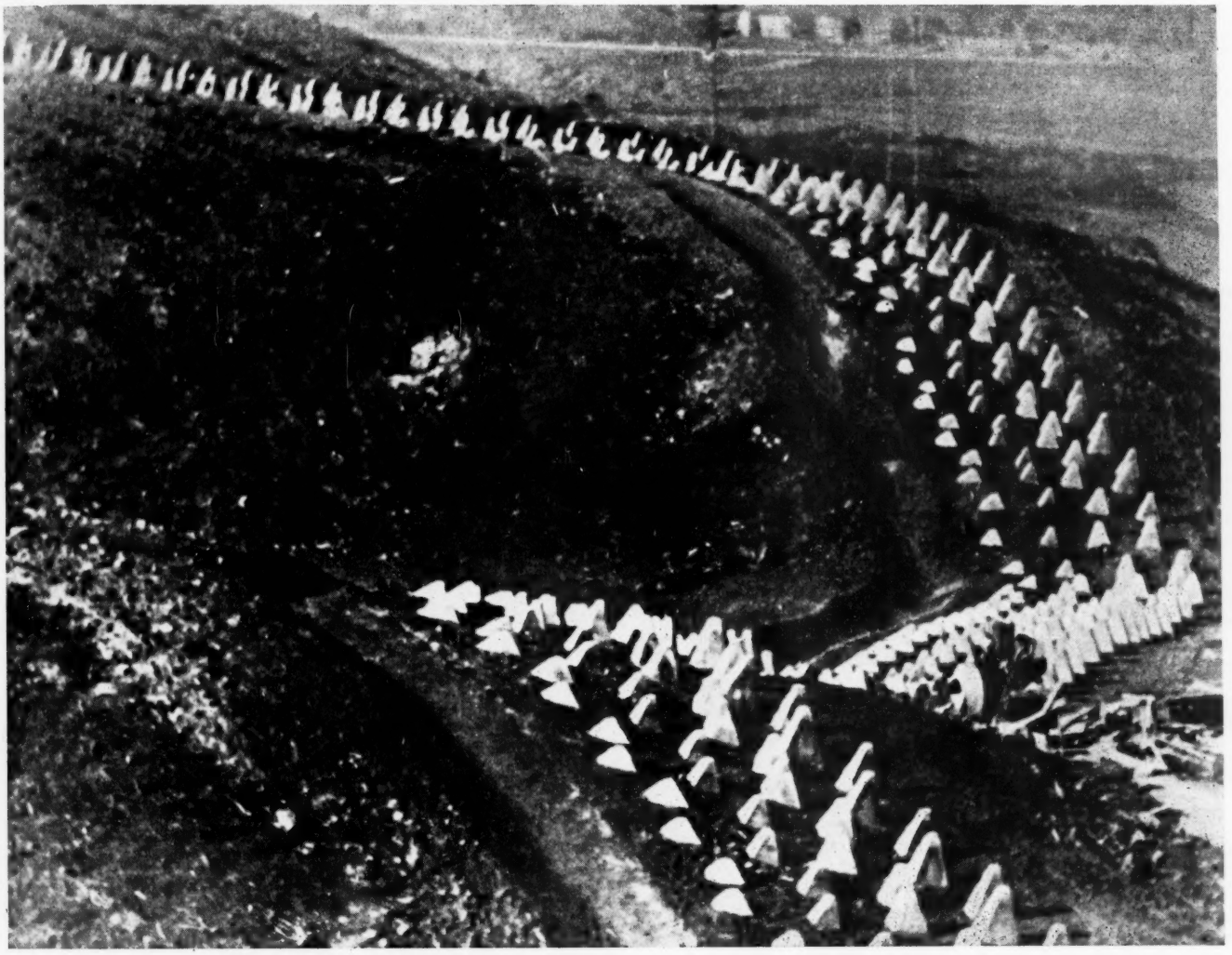
Following family tradition, Viscount Gort entered the World War as a young officer in the 1st Battalion, Grenadier Guards. He won the Victoria Cross, highest British decoration, for extraordinary bravery under fire, for his heroism in aiding the capture of 200 prisoners while wounded (he was wounded three times during the war). He was called "The Tiger." After the War he served as Colonel in India and as Colonial Chief in Shanghai during the 1927 revolution.

After the close of the World War, the English people, navy-minded for hundreds of years, promptly proceeded to disregard the fate of the army. The situation became so unsatisfactory that when Hore-Belisha became War Secretary in the Chamberlain Cabinet, drastic measures were adopted that resulted in the most important British Army "shakeup" since the World War, and as a result Viscount Gort became Chief of Staff in December 1937.

There is no hesitation in the English mind of Gort's ability to lead the British Army. This idea was strongly expressed in 1937 by Sir Ian Hamilton, when Viscount Gort became Chief of Staff: "Thank God! We are under a proper soldier."

The German Army is commanded by General Walter von Brautchitsch, fresh from a victorious whirlwind campaign in Poland. The salient points of his career are given in this issue under "The Collapse of Poland."

The Maginot Line built at an enormous cost and completed in 1934, has been constantly improved. Well-sheltered electric plants provide power for lighting, elevators, narrow gauge railroads and a system of ventilation which protects against seepage of poison gas by an increase of air pressure within the casemates. While it was thought that the LINE, which, in fact, is a series of fortified units, could not be broken, it was feared that flanking movements might take



Wide World Photo.

THE SIEGFRIED LINE, SHOWING SEEMINGLY ENDLESS ROWS OF TANK TRAPS, COMMONLY TERMED "GRAVESTONES OF TANKS."

and trap the garrison from the rear. Thus, two wings, one north along the Belgian border and the other south along the Swiss Jura were added to the main structure facing Germany. Both were completed this year.

The Maginot Line is relatively shallow, whereas the Siegfried Line—which should be called the "Siegfried Zone"—is very deep. The Maginot Line is of immense, but rigid strength; the strength of the Siegfried Line is much less at any given point, but defense is provided by the interdependence and mutual support of its various parts. The former might be compared to a steel wall, the latter to a series of steel buffers distributed in depth.

The Maginot Line stands for passive defense, the Siegfried for defense based upon the counterattack. To break through the Maginot Line would be a task of almost inconceivable difficulty, but once accomplished, the attacker would find himself up against the mobile field forces in rear of that line. To breach the Siegfried Line is a physical impossibility before the German Army is actually defeated, because the system would expand to the rearward and develop new lines of defense with fresh divisions continuously being brought up to replace those exhausted by counterattacks. The Siegfried Line is based upon a more modern tactical doctrine which has the strong support of recent experience, namely, that owing to the striking power of modern weapons, the best defense is not to withstand the shock, but to absorb it, to slow it down, to muffle and blanket it, and then, at the proper moment, when the hostile impetus has spent itself, to react vigorously by means of a counterattack.

The existence of the Maginot Line and the Siegfried Line makes a concerted offensive along the first World War lines very dubious.

Up to now the activity on the western front has been nominal. It is claimed that the Allies are willing to have this situation continue. They believe that the blockade, despite the supplies that Russia will send to Germany, will ultimately weaken the Reich. The Allies feel that in view of this circumstance, it is sounder for them to attack later, after Germany has been somewhat weakened by the blockade. There is also some evidence that the Allies are counting on this situation to force Germany into an offensive in which the Reich would have to hurl enormous numbers of troops against the French Maginot Line. The theory behind this opinion is that Germany faces the prospect that the block-

ade will make her progressively weaker, thus compelling her to attack before its devitalizing effect is severely felt. If the Germans attack the Maginot Line, the Allies' hope is that heavy German casualties, plus the shooting away of a large amount of German military matériel, which then will be difficult to replace, will insure the success of a later Allied counteroffensive against Germany.

That the Allies are pinning their hopes in the effectiveness of the blockade can be seen from the following warning by Paul Reynaud, France's outspoken Minister of Finance, when he said recently: "Those who believe that only artillery speaks with authority are deluding themselves. The outcome of this war will not depend on where we can pin little French or British flags on war-maps. I am telling the truth when I say that already in great measure Germany is exhausted by her gigantic effort of past years to prepare herself for war. Do not forget that while the military front is vital, behind it must be the support of an invulnerable economic, financial and monetary front * * *. I might point out that today the Bank of France possesses twice as much gold as it had in August 1914. Our economic and financial position is immensely superior to that of the enemy."

The stalemate along the German-French border cannot continue indefinitely. It is difficult to foretell what will happen in the immediate future, but there seems to be at the moment three possibilities.

1. A general offensive against France, combined possibly with a turning movement through Belgium, or Belgium and Holland, or, more improbably, through Switzerland.

2. A strong air offensive against Britain and France, which might be combined with a ground offensive against the Maginot Line.

3. A severe air and submarine offensive from bases established either in Belgium or the Netherlands, against the British with the hope of sinking the British Navy, breaking the blockade, and sinking the British merchant fleet, thus compelling Britain to accept peace terms.

The French Newspaper "La France Militaire," 23 September 1939, reports that the French covering forces found the following signs put up by the Germans facing the French frontier: "Ne passez pas la frontière at nous ne tirons pas." (Do not cross the frontier and we won't shoot.)

On the other hand, from Switzerland comes the report that French military engineers, after politely warning German sentinels on the opposite bank of the Rhine, dynamited on 21 October a small steel foot-bridge spanning the river near the electric plant at Kembs, twelve miles north of Basel, Switzerland.

To a great many people the war being waged on the Western Front is as strange as it is mystifying. It has, up to the moment of this writing, followed no accepted forms or precedents nor are there parallels for it in the recorded history of armed conflicts.

A definite estimate of the aspects of another major war on the Western Front is impossible, in view of the progress made by aviation and mechanization; but there is no question that both sides, armed as never before, are planning events to attain the same objective with all the means at their disposal, namely, to destroy the enemy's will to fight and compel him to surrender.

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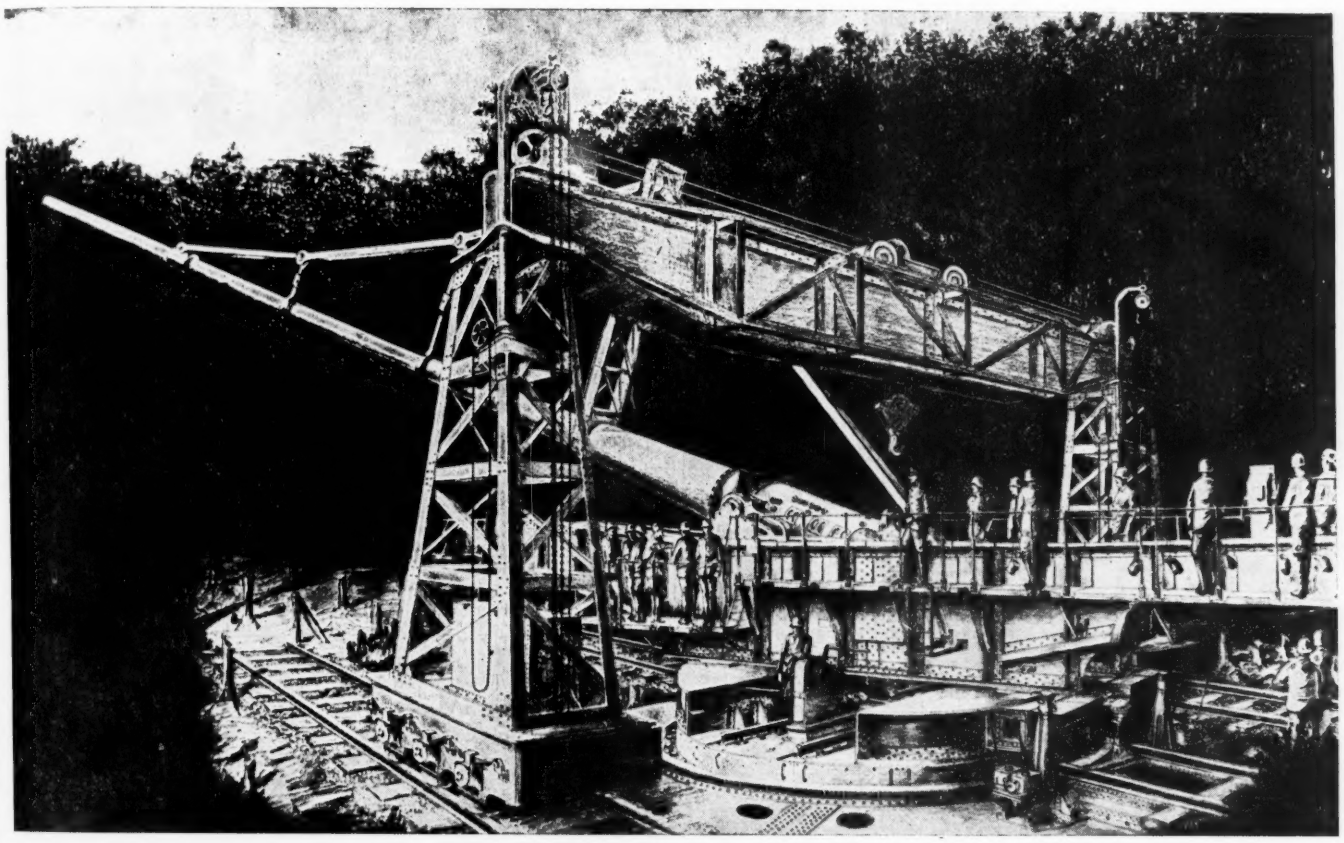


Wide World Photo.

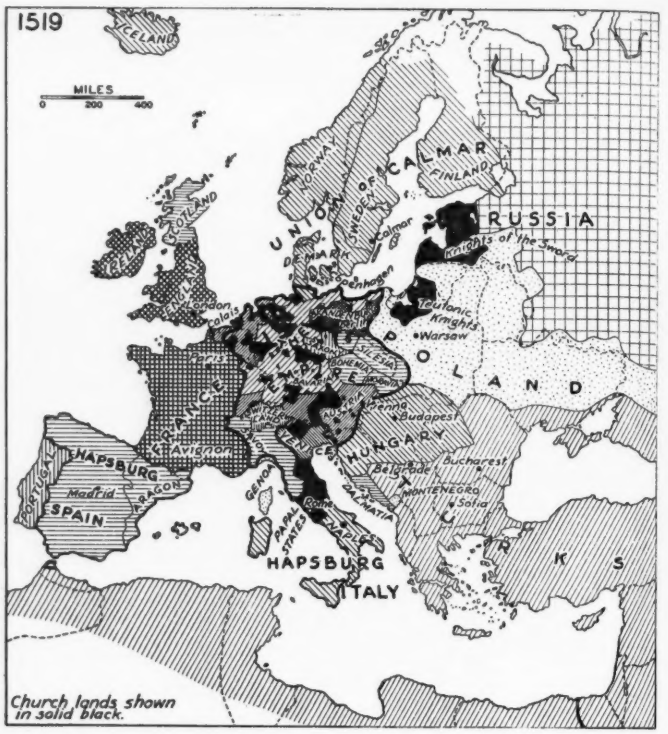
"Big Bertha", the German Long-Range Gun That Shelled Paris From a Distance of Approximately Seventy-five Miles, as Reconstructed From Data Assembled by Lieut. Colonel Henry W. Miller, Ordnance Department.

Early on the morning of 23 March 1918, heavy shells fell on Paris from a long-range gun about seventy-five miles away. The world was astounded.

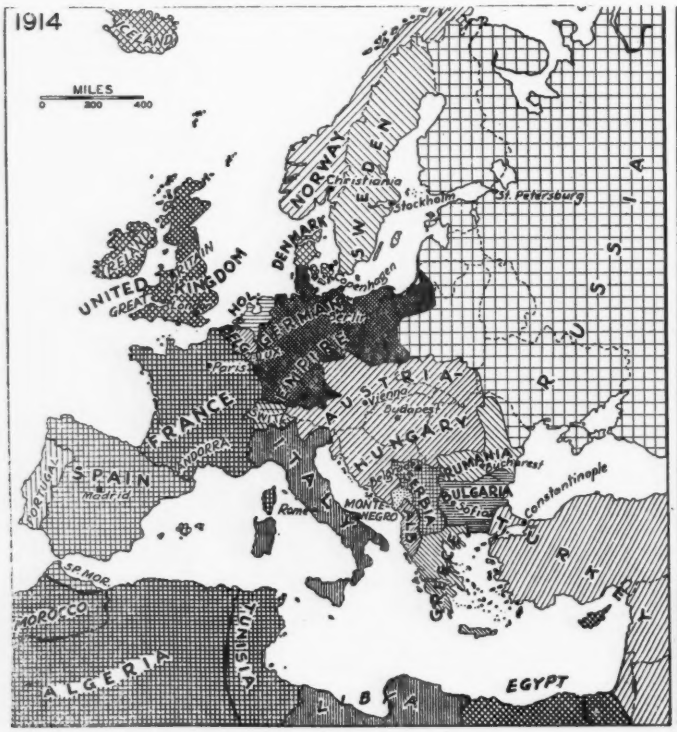
The gun was a 38-cm (15.2-in) naval gun, reconstructed by Professor Rausenberger of the Krupp firm working in conjunction with the Arms Department of the Naval Office. A specially reconstructed inner tube had decreased the caliber of the gun to 21-cm (8.4-in). The weight of the shell was 264 pounds; weight of powder charge, 660 pounds; maximum range, 81 miles; time of flight of the projectile, three minutes; life "expectancy," from 50 to 60 shells; approximate cost, $1,540,000.

Only seven of these guns were made. The first three were initially employed during the spring offensive of March 1918 and were continued in service until 9 August 1918. There were only three emplacements and during the German retreat these three guns as well as the four then at Essen were destroyed.

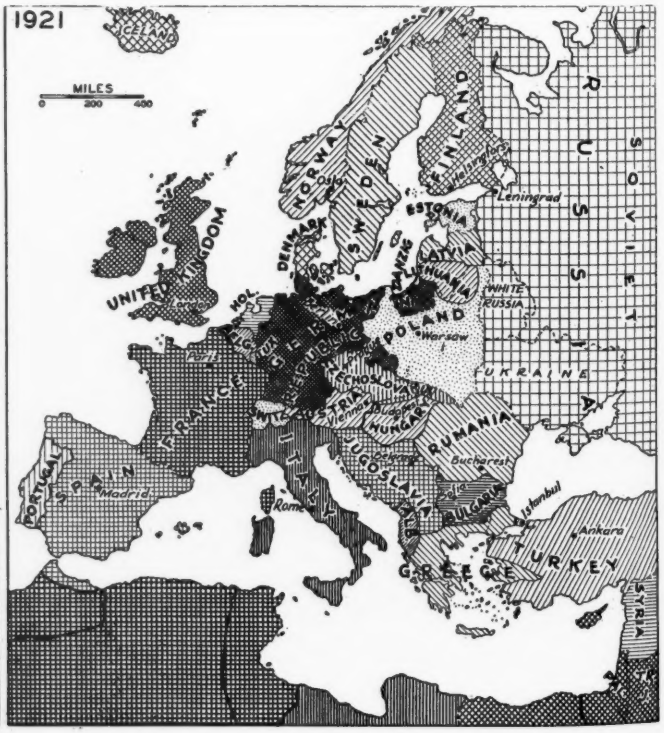
1100—In stormy Europe 839 years ago the dominant power was the Holy Roman Empire (the Empire), a Germanic union founded by Otto the Great in 962. Henry IV. of the house of Franconia was emperor. Unlike earlier rulers of the Empire, he opposed the pope. England was rising as a power, having been conquered by the Normans in 1066. Southern Italy also was under Norman control. The Eastern Roman Empire, under Alexius I., was flourishing; Spain was largely in the hands of the Moors, who had invaded from Africa; and France, under the Capet King Philip I., was as yet only a minor power.



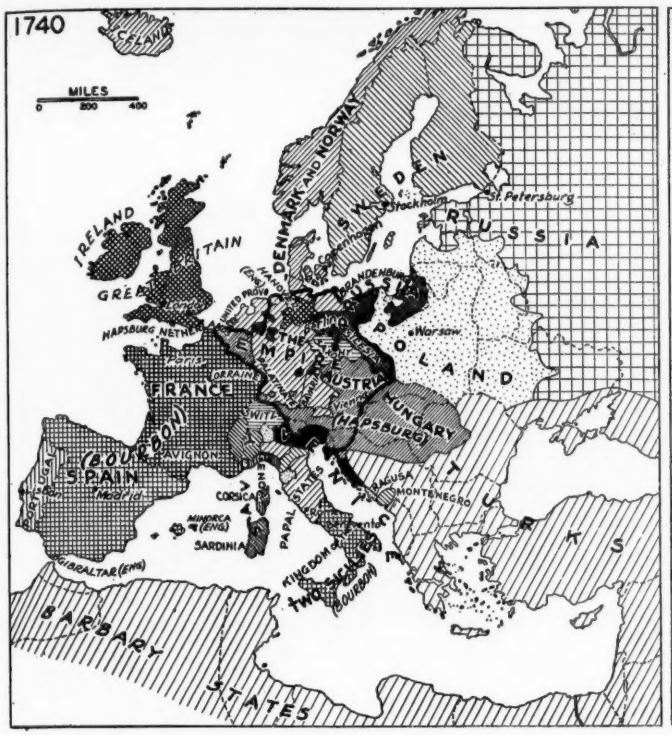
1519—Spain by this time had risen to first rank, after the expulsion of the Moors from its shores, and the discovery of America. Its king was Charles I. of Hapsburg, who in 1520 was crowned emperor of the Holy Roman Empire as Charles V. A new Mohammedan power, that of the Ottoman Turks, had swept into Europe from Asia Minor, taking Constantinople in 1453. The Eastern Roman Empire was no more. The beginning of Prussia was tiny Brandenburg. Scotland still was independent, under the Stuarts, and Henry VIII., father of Queen Elizabeth and most famous of the Tudor kings, was on the English throne.



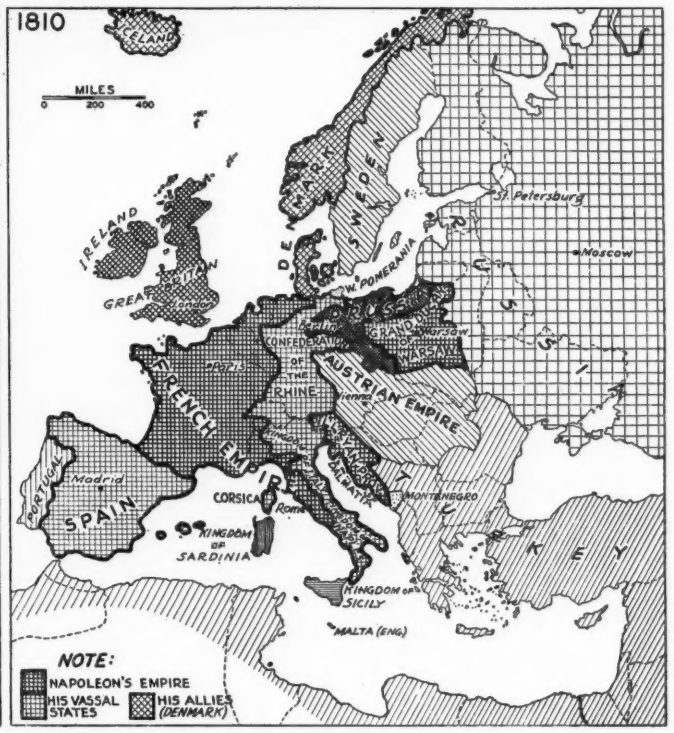
1914—On the eve of the World war, a more terrible calamity than the Napoleonic conflicts, Europe had been relatively calm for some time. Prussia, by its defeat of the Austrians in 1866 and the French in 1871, had consolidated a collection of German states into an empire. The war, touched off by the assassination at Sarajevo, Bosnia, of Francis Ferdinand, heir to the Austrian and Hungarian crowns, saw, before it was finished, Germany, Austria-Hungary, Turkey, and Bugaria on one side, and on the other Great Britain, France, Italy, Russia, Amerca, and a number of smaller nations. The central powers lost.



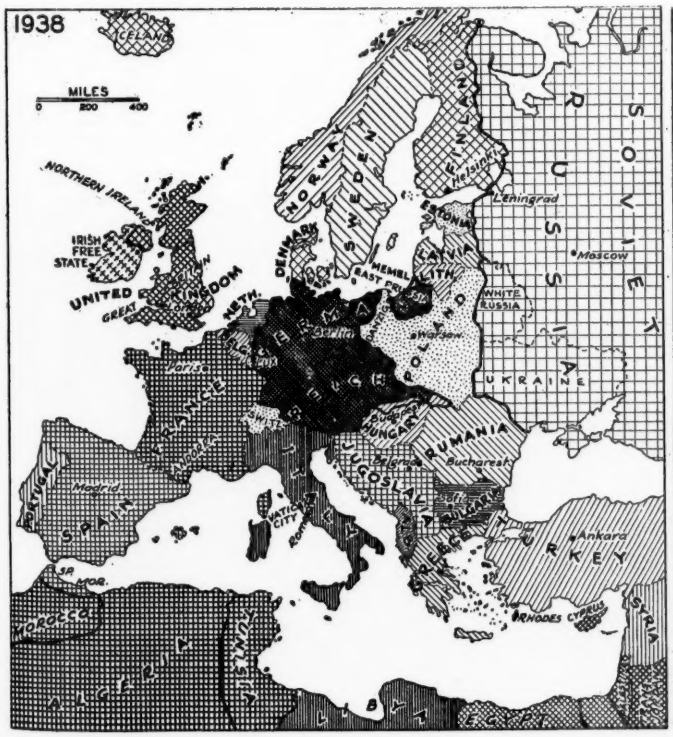
1921—Various treaties concluded at the end of the war, including that of Versailles, virtually remade the map of Europe. Alsace-Lorraine, former French territory, went back to France. Poland was restored as a nation, with lands taken from Russia, Germany, and Austria-Hungary. Czechoslovakia was created out of the Austro-Hungarian provinces of Bohemia. Moravia, Slovakia, and Ruthenia. Rumania got Transylvania and Bessarabia. Little Serbia was expanded into Yugoslavia. Austria was left a little republic, Hungary a little kingdom without a king. Finland, Estonia, Latvia, and Lithuania were set up.



1740—This was the year that Maria Theresa of the house of Hapsburg-Lorraine came to the throne of the Holy Roman Empire, now considerably shrunk, but still a great power. Scotland long ago (1603) had been swallowed up by England. The Bourbon Louis XV., great-grandson of the Grand Monarch, was on the throne of France. Another Bourbon, Ferdinand VI., was king of Spain. Also under Bourbon domination was the kingdom of the Two Sicilies. Poland by this time had spread over a wide territory. Its ruler was the German-born Augustus III. Arising in Sardinia was the nucleus of modern Italy.



1810—Here was a Europe stormier than before. Napoleon had crushed the Holy Roman Empire in 1806, leaving to Francis II. of Hapsburg only Austria. The Napoleonic Empire by 1810 had taken in, directly or as dependencies, all of France and of mainland Italy, most of the former Holy Roman Empire. Spain, the Low Countries, the Illyrian and Dalmatian coasts, and the grand duchy of Warsaw, the last named a re-creation of Poland. Great Britain, Russia, Prussia, and Austria were enemies of Bonaparte in 1814, when his empire went to pieces. His come-back in 1815 failed on the field of Waterloo.



1938—Clouds over Europe! This was the year marked by Germany's open defiance of its former enemies. In March, Adolf Hitler, without meeting other than verbal opposition, took over and incorporated into the German Reich the republic of Austria. In the last days of September occurred the historic Munich conference. This marked the beginning of the breakup of Czechoslovakia, that put under German control the provinces of Bohemia, Moravia, and Slovakia and turned over to Hungary the little spear point called Ruthenia. Even Poland in the split-up acquired a narrow strip of Czechoslovakia.

1939—A new storm breaks! In March of this year Hitler consolidated his control over Czechoslovakia. The next month saw Italy's seizure of Albania and the flight into exile of King Zog. And now the war! Five German armies invaded Poland along a lengthy frontier, retaking the free city of Danzig, the Polish Corridor, and other former German territory. Polish resistance everywhere was smothered by the power of the Germans. Moving in from the east soon after the German invasion, Russian troops advanced in Poland to the German lines. In Poland's dismemberment Germany took the western half, Russia the eastern.

Courtesy of the *Chicago Tribune*.

Foreign Military Digests

Digests of important articles from foreign military periodicals; the remaining articles for each magazine are listed in Catalog of Selected Periodical Articles.

Motorized War

["La Guerre Motorisée," by General Duval, French Army. Condensed from *L'Illustration*, 29 October 1938.]

By Captain A. L. Keyes, *Field Artillery*

The Internal Combustion Engine and the Caterpillar

At Saint Helena, Napoleon gave utterance to the thought that human progress is measured by the extent of gains won over time and space. Judged by this standard, what a triumph has been realized by humanity in the past fifty years!

A little over a century ago, the record set by Pheidippides after the battle of Marathon was still an adequate measure of man's capacity for rapid movement. Our own grandparents shuddered apprehensively when locomotives first reached twenty-five miles an hour. Today we reckon with automobile speeds of 300 miles an hour and airplane speeds of nearly 450; instantaneous transmission of speech is an accomplished fact and we are about to achieve television. Man stands on the threshold of a great new epoch; there must inevitably ensue a profound transformation of

Wide World Photo.

French Tanks on the Road Somewhere in France.

life itself, in its moral aspects as in the physical, in peace and in war.

Military action throughout the ages has been dominated by two factors, force and mobility. The magnitude of the factor of force has unceasingly increased during the six centuries that have elapsed since the invention of gunpowder; mobility, until recently, has remained practically a constant.

The advent of the locomotive, however, widely extended the scope of strategical movements. Masses of troops considerably dispersed in terms of space but capable of rapid movement by rail to the various parts of the theater of operations could now be considered as concentrated. But, since no railway net is sufficiently dense to qualify as a tactical instrument, the excellent highway system of Central and Western Europe must still serve for this purpose as it has in past wars.

Beginning in 1915, the widespread use of the motor truck transformed tactical maneuver. The endless columns of plodding troops of former days gave way to swiftly moving motor convoys, speeding relieving infantry to the lines and relieved units to the rear, dashing to threatened sectors with masses of reserves. Still, during the War of 1914-1918, only foot troops derived any real advantages from truck transportation; cavalry, artillery, and trains followed the infantry at their own slower pace and days elapsed before a complete division or corps could concentrate for effective combat. Long, fatiguing forced marches were obviated but real economy of time had not yet been achieved.

In 1938 a totally different situation confronts us. Seven French divisions have been *motorized*. A very few hours suffice to allow employment of these units in combat after a single bound of 50 or 60 miles. The purpose of *motorization* is transportation and increased radius of action, not battle; in action the *motorized* unit is indistinguishable from similar units not motorized.

The tank represents the next application of the gasoline engine to the military problem. Force rather than speed dictated its development. A powerful machine capable of battering down the hostile defenses requires cross-country mobility and wheeled vehicles, even those equipped with multiple wheels, have failed to afford the necessary bearing surface to heavy tanks whose missions involve the crossing of trenches and the ascent of steep embankments. The limited life of the endless track, about 2,000 miles as a practical maximum, was and is a notable disadvantage and so six-wheeled personnel carriers, designed to accompany certain tank units, have been adopted. The track, however, has proved to be an essential to the tank itself.

The tank has seen a gradual extension of its field of usefulness until it is now a fundamental part of all arms and all units in all types of operations.

Reconnaissance

Among tne first to benefit from the new automotive developments was the cavalry, whose traditional and unchanged missions of reconnaissance—distant, close, and battle—of counterreconnaissance, and of security involve high mobility, great radius of action, fire power and capability of shock action. Besides adopting all of the infantryman's weapons, including automatic arms, 37-mm guns and light mortars, the cavalryman has created accompanying forces of motorized and mechanized units to support his horse squadrons. The composition of these forces varies with the tactical assignment of the cavalry troops of which they are a part.

To the mounted rifle and machine-gun squadrons of each corps and division reconnaissance group has been added a completely motorized squadron consisting of four armored cars, a radio car and from 100 to 150 motorcyclists.

The French cavalry division, acting under the orders of the commander of a field army, has, besides its four horse regiments and six batteries of horse artillery, three battalions of motor dragoons (truck-transported riflemen, machine-gunners, and similar units), three batteries of *portée* artillery, a company of combat engineers mounted on motorcycles and three squadrons (36 vehicles) of armored cars, some capable of high road speed and others designed for reliable but comparatively slow progress over difficult terrain.

To provide adequate security for the newly-constituted motorized infantry divisions, two cavalry divisions have been completely mechanized. All of their vehicles are of combat type, highly mobile over varied terrain; although armored cars predominate, some light tanks, similar to those assigned to the infantry and discussed further on, are included.

The Attack

As the main bodies of the opposing armies engage in battle, ammunition is consumed at an enormous rate and its replacement is vital. In the past, due to the vulnerability of wagons and trucks, the last stage of the forward movement of ammunition has been accomplished by carrying parties—a slow and uncertain process. Today, supply in quantity and with great economy in manpower has been realized with the adoption of the infantry *tankette*, an armored, track-laying vehicle, about one-half ton in weight and of low profile, towing a trailer of slightly greater weight. Each infantry regiment includes about ten of these machines.

Tactical assignment and the normal mission of the unit determine the degree of motorization attained in the artillery.

Effective communication throughout the command has been achieved by the use of radio-equipped liaison tanks.

As the attack progresses and hostile resistance increases in intensity, a point is reached where our infantry, unable to advance farther with its own means, must call upon the tanks. These fall generally into two categories—accompanying and leading tanks.

The former type is relatively light—8 to 10 tons in weight—and its heaviest weapon is the 37-mm gun. Although able to cross a wide range of obstacles, its maximum speed, rarely obtainable on the battlefield, is from 5 to 6 miles an hour. Its armor is invulnerable to the fire of light infantry weapons but not against that of antitank cannon, which can pierce 1.2-inch armor at 875 yards and 0.4-inch armor at 1640 yards, provided the projectile meets the armored surface head on. Battlefield conditions and the scientific sloping of the armor so as to invite ricochets will certainly reduce the effectiveness of even these powerful weapons.

These accompanying tanks are preceded in combat by the leading tanks, heavier in weight, more thickly armored, and carrying a larger crew and more armament. Their mission is to open a breach for the smaller tanks and the infantry.

For special missions, such as the attack of antitank batteries and hostile tanks, there is a third category, the heavy tank, 20 to 30 tons in weight, which may carry weapons of caliber as large as 75 millimeters.

Employment of the mass of tanks is characterized by distribution in depth and close liaison with the infantry.

Maneuver

Discussion thus far has been limited to increasing the effectiveness of the frontal blow. Success in this phase, coupled with possibilities of higher speed without loss of striking power, led to adaptation of the new weapon to decisive maneuver. In spite of uncoordinated early efforts, in which enthusiasm and wishful thinking played too great a role, more recent, carefully controlled experimentation has encouraged the organization of a mechanized maneuvering force, capable of independent action and not subordinated to another unit. In adddition to combat, reconnaissance, and command vehicles, it must have its own infantry, equipped with motorcycles or transported in multiwheel or track-laying tanks. It should be emphasized that in this force the infantry is the supporting, not the supported, arm.

The probable mission of this force can best be pictured by applying it in theory to the German advance in August and September, 1914. Let us suppose that von Kluck's Army on the extreme right flank had been preceded at a hundred miles by a mechanized force consisting of light divisions and armored divisions with a powerful aviation component. This force could have advanced rapidly towards the region around Chartres and Orléans, clearing the way for von Kluck. It can be said without fear of contradiction that the German right, instead of becoming hopelessly engaged with the Allies' left, would have marched unopposed to the execution of von Schieffen's great dream of a vast, decisive envelopment.

Supply

The timely supply of a moving army without overburdening the individual soldiers or encumbering the troop columns with long trains appropriately called *impedimenta* has ever been a difficult problem. When it has not exercised a dominating influence on the execution of military plans, freedom from its limitations has been won only at the expense of troops willing to accept the privations involved. Present indications are that the motor vehicle will answer all requirements. Like the animal-drawn wagon, it not only can follow the combatants everywhere, but it also can, by reason of its superior mobility, remain secure in its bivouac until the troops approach the day's march objective, then cover in less than an hour the dozen odd miles separating it from the troops, deliver its cargo and return to the supply installations in the rear areas to pick up its load for the following day. A motor supply column 40 miles distant from the troop unit to be supplied is closer to that unit in terms of travel time than a wagon train at a distance of only six miles. Motorization of trains is progressing rapidly in the French Army.

Conclusion

Lest it be thought that imagination has played too great a part in this brief exposé, it should be emphasized that it gives, on the contrary, a very incomplete picture of present possibilities, not to mention future developments. Neither the public nor, perhaps, all of the military profession, are cognizant of the importance of the mass of motor vehicles represented by the light divisions, armored divisions and tank units of all categories in the French Army. Yet these are but a beginning. If, in addition, all the light vehicles and trucks, whose sole purpose is transportation, are considered, it may well be said that the armies of the world, with the French Army among the foremost, are entering a new period of military history, perhaps of universal history.

One problem, the gravest of all, remains, however, to demand a new orientation of science, of industry and even of the imperial and international policies of the nation and this is the question of fuel.

The Commander in Modern Warfare

["Le commandement moderne," by General J. Rouquerol. Condensed from *Revue Militaire Suisse*, September 1938. Translated from the French in the Translation Section, The Army War College, Washington, D.C.]

By Lieutenant Colonel E. M. Benitez, *Coast Artillery Corps*

The invention of the telephone came at a time when the means at the disposal of a military commander were becoming less and less adequate due to the increase in extent of the theater of operations.

The telephone and radio communication made unessential the personal reconnaissance of the terrain by the military commander. Intelligence summaries, reports of subordinate commanders and liaison officers were posted on the operations map from the study of which sprang the directives issued by the commanding general.

The efficient functioning of higher headquarters depends largely upon the security of its location and for this reason these headquarters should be located out of the range of hostile guns. This consideration was also applied by a number of high-ranking commanders to the location of headquarters of command of front-line troops, relying upon the telephone as the chief means of communication.

When General von Falkenhayn was appointed to the German High Command in September 1914, one of his first acts was to resume the offensive in the Argonne front which

his predecessor had abandoned. Orders were issued directing the crossing of the Argonne, from Varennes to Vienne-le-Château in one single day of fighting. By that forced march, von Falkenhayn intended to envelop the right flank of the French Fourth Army.

General von Mudra, who commanded the German XVI Corps, was a great student of the terrain. He reconnoitered the countryside in the vicinity of Metz, and as a result, recommended certain changes in the directive issued which were disregarded by the German High Command. Such stubbornness can only be attributed to unfamiliarity with the theater of operations, because no one could have failed to recognize as an obstacle those woods, thick with underbrush, impenetrable in many places, where roads were few and poor and any one of them might lead the invader into ambush.

Events proved that von Mudra was right. The German Fifth Army suffered a number of bloody reverses, until finally the Army Commander gave von Mudra a free hand for the conduct of future operations. Thus, for all intents and purposes, the Army Commander surrendered his authority to a subordinate which, fortunately in this case, was never to be regretted.

While von Falkenhayn was formulating his plans for the Argonne operation which later ended in failure, the French Commander on the front south of Verdun was taken by surprise when the German Army Detachment "Strantz" attacked the Heights of the Meuse. This operation was organized with the utmost secrecy and was launched in the Woevre region on 18 September 1914. On the 19th, the German attack struck a French division that was marching at the head of an entire corps which the Commander-in-Chief of the French Army had dispatched to the Woevre region with orders to block a German offensive that had been reported by the French intelligence service. A clash with this French corps would have been disastrous for the German operation that was just barely under way. Imagine the pleasant surprise of the German command when it discovered in the evening of 19 September that there were no hostile troops in the immediate front.

What had happened? The Commanding General of the French Third Army was so completely absorbed with preconceived ideas that he made no attempt, either personally or through a competent staff officer, to investigate the reports of events that were taking place within 12 miles from his headquarters. He failed to inform his superior commander of the developments of a situation which was growing more serious from hour to hour. Naturally, the Commander-in-Chief of the French Army, not knowing what was taking place in the Woevre region, concluded that the corps mentioned above was not needed on that front and changed its direction of march just at the moment when an excellent opportunity was offered to accomplish its mission.

The history of the World War is replete with examples of operations based on maps or on superficial reconnaissance. The French offensive of 5 April, the purpose of which was to close the Saint-Mihiel salient, is a good example. The French plan consisted of launching surprise attacks against the German positions in the Woevre region, in the south and in the north, simultaneously. Each of these attacks was to be carried out by two corps.

The ground selected for the offensive was a veritable swamp, where even the smallest hole would fill with water immediately and where it was practically impossible to dig trenches, shelters or anything else required by troops when operating on open or level ground. It is difficult to believe that the author of this plan would have adhered to its original conception had he visited the terrain.

The operations were based on secrecy and surprise. As early as 5 April it was evident that the Germans were on guard and that surprise was out of the question.

In spite of the initial reverses, the commander of the four corps continued the attack with troops which he considered of decisive strength, but which actually were insufficient because the element of surprise was lacking.

At the outset of a war, it is logical for the staffs to conform to the rules laid down by the service schools in time of peace, although it is certain that these rules will be discarded upon the outbreak of a major war. It is only by keeping in touch with actual conditions that the spirit of those rules can keep pace with the changes that the initial engagements will bring about. This explains the defeats suffered by those commanders who thought that the telephone and the map were the only things needed to exercise command. The reverses were not the fault of either the telephone or the map; they were due to lack of intelligent preparations for their employment.

When the World War broke out, few officers had even the faintest notion of what the war of position would eventually be like. Hard-working chiefs would conscientiously study plans, sketches and other illustrations of positions occupied by troops. Whenever a new incident arose, the commanders would learn of it through a telephone message. Unaccustomed as these generals were to the endless mire and the multitude of other obstacles encountered in trench warfare, they failed to give due consideration to the execution of their directives, but took it for granted that the subordinate commanders in the front lines were exaggerating the difficulties.

No commander, whatever his rank may be, has the right to judge the outcome of a military operation unless he thoroughly understands the situation. Information furnished by subordinate commanders or by general staff officers is of value only if the officer in charge possesses personal knowledge of the actual conditions of the terrain and of the actual state of affairs on the front. Without that knowledge—which can only be obtained through personal reconnaissance, the commander is invariably inclined to entertain conceptions that are more ideal than practical. Moreover, his immediate staff and subordinate commanders as a rule tend to agree with his wrong ideas, lest they be reproached for being unduly cautious. No doubt, many officers who have taken an active part in military operations on a large scale will remember the misleading information which so often caused commanding officers to make ill-timed decisions of the most serious consequences. Military leaders who are unanimously recognized as masters of the art of war invariably are noted for their great activity and always investigate personally all important matters. If these leaders cannot make a personal investigation, they are careful to entrust the reconnaissances only to staff officers who have proven their good judgment and tact.

Excessive reliance upon information secured by use of maps may lead to grave errors, unless terrain conditions are checked by a thorough personal reconnaissance. We may blame most of these errors on a thoughtless practice of indoor map exercises held in times of peace.

Map exercises, the sand table and other instruments by which to simulate operations in the field, all are excellent means of instruction and are commonly used in all armies. Above all, they permit the rank and file to become familiar with the mechanics of military maneuvers and afford the military commander an opportunity to teach the officers under his command how to estimate a situation and make a decision in line with his own conception of tactics. From this point of view, map exercises and other auxiliaries are priceless means of instilling in a body of officers that harmony of views which creates initiative and teamwork.

On the other hand, it is a mistake to accustom officers to become so absorbed in map studies that they fail to visualize the characteristics of the terrain. The remedy for this dangerous practice is simple; before a tactical exercise is held indoors, it must in each case be preceded by a systematic reconnaissance of the terrain in question. Had that general practice been carried out before the World War, it no doubt would have served as a warning to those staff officers who were inclined to believe that "things are as one desires them to be"—which, as Bossuet says, is the greatest mistake that a man can make.

There is no question that, in modern warfare, a commander-in-chief of the armies, an army commander, a corps commander, or even a division commander must remain at a central location of his zone of command. This is essential so that subordinate commanders may at any time get in touch with the next higher commander. However, it must not be concluded that the commander is not responsible when his directives are not carried out or when a grave situation arises in his zone of command due to the fact that he has failed to take proper precautions.

During the World War, those commanders, on either side, who remained masters of the situation, in defeat as well as in victory, combined great personal activity with their purely military qualifications. This "activity" must not be confined, however, to pleasure rides in staff cars far behind the front, where it is impossible to see what the troops are doing. It is perfectly proper that for the direction of the operations the commanding general and his headquarters be removed from the danger of the zone of combat, but this consideration must not be abused. As a matter of fact, it is difficult for a commander to form an estimate of military conditions, though he may recognize their cause, unless he himself has lived under similar conditions. Obviously, the place of a general is not with a regiment in the front lines. Yet, how can he appreciate what is taking place on the front, if he has never been there?

All of these remarks concerning the activity required of a military commander are inspired by our memories of the World War and of the training methods employed prior to 1914. Modern inventions may change the character of the next war; but they will hardly require us to change the conclusions which we have drawn for the future.

Nobody can say definitely what the aspect of another major conflict in Europe will be, considering the progress made in aviation and mechanization.

The experiences of the Italian troops in Ethiopia are interesting, as far as the performances of the matériel is concerned. However, that campaign has furnished us no tactical lesson, for the Ethiopians had at their disposal neither aircraft nor motorized equipment with which to oppose the air forces and motorized and mechanized units of their opponent.

The events in Spain are too incomplete a picture of a war between large modern armies to constitute a highly suggestive precedent.

All we can see up to now is that the employment of aircraft and mechanized forces will create incidents that will be difficult to oppose. The problem will be to localize the effect and to create similar incidents in the ranks of the opponent. The speed with which operations of these arms can develop calls for a corresponding speed on the part of commander making his decisions.

Notwithstanding the valuable assistance of radio communication, the influence of the commander will make itself felt mainly through his foresight and through the directives that make up the framework within which the subordinate commanders exercise their authority in accordance with the situation. The employment of aircraft as a means of personal reconnaissance by the higher commanders opens new perspectives to their activity.

The only general conclusion to be drawn from this study is that, although the conduct of war has undergone material changes in the course of our generation, these changes have had little effect upon the qualities that characterize those who possess outstanding qualifications for positions of high command. The best commanders are those who understand best the natural and human conditions of war and who know how to make the most of them in their decisions. The evolution of modern warfare has expanded the sphere of action of the military commander, but it has placed in his hands at the same time the means with which to exercise his influence. Now, as ever, the military leader must carefully watch for signs that might forecast some important event. It is logical that, the higher the authority, the less attention to details its directives will pay. Yet, in order to avoid mistakes, the authority which issues the directives must be fully acquainted with the methods by which these directives must be executed in each particular case. No new invention can change this rule which applies to all commands; a military command can be fully exercised only by men who combine a tireless activity with their purely military qualifications.

The Air Factor in Modern Warfare

["Le facteur aérien dans la guerre moderne," by General Mouchard. Condensed from *Revue des Questions de Défense Nationale*, May 1939.]

MAJOR WM. H. SPEIDEL, *Infantry*

"Aviation, as a result of its gigantic technical strides, has expanded the aerial theater; to the side most powerfully armed it guarantees the command of communications as well as the mastery of aerial operations. It calls for industrial rivalry."

As early as 1918 Marshal Foch wrote the above in the preface to the fifth edition of his book, *Principes de la Guerre*, adding that "war is an entirely new art," governed of course by "fundamental and unchanging truths" but also by technical progress and the conditions under which armament, particularly aerial, is employed. During the twenty years which followed, the science and industrial achievements of aeronautics made gigantic strides; the process of unexpected development continues. In 1935, in a speech made on the occasion of the presentation of the Cross of the Legion of Honor to the *Ecole Superieure de Guerre*, Marshal Pétain said: "The airplane, by carrying destruction to the most distant vital centers, has destroyed the limits of battle fixed formerly by the range of artillery. The fundamental rules of the military art are in danger of being affected profoundly. We may even wonder if the airplane will not impose its own laws in the conflicts of the future."

Is it not the very purpose of warfare "to impose its own laws"? Thus in a few phrases Marshal Pétain crystallized the concept of the principal problem in the employment of air forces, both present and future.

During the past twenty years the speed, radius of action and carrying capacity have been at least trebled. Improved altitude records have favored considerably maneuvering in space. The additional number of machine guns, their increased rate of fire and the development of a small caliber cannon have improved the power of its armament. The industrial possibilities of airplane construction have developed to different degrees depending on the country; the creation of the German air force with its dreadful extension has served as an example, causing all the large countries to take measures to provide large air forces. At present the fact that the air arm may be renewed and also rapidly increased may be considered as one of its special characteristics, provided a serious effort is made to train the various specialists required. It might also be stated that this arm effects a relative economy in personnel, since only the crew participates in aerial combat. The conditions under which it is employed have also improved considerably as a result of the rapid development of meteorological science, improvements in aerial navigation and the extensive use of radio. Trained crews can utilize most of the cloud systems and navigate both night and day with a confidence which increases the possibilities singularly.

The employment of the airplane, however, is conditioned likewise by the progress of the means of defense. The struggle continues between the airplane and antiaircraft artillery with its modern instruments for precise location, but in this duel the former still has a net advantage.

In summary, we may consider the following as the essential characteristics of the air arm:

(1) Ability to act by surprise by reason of its speed, great radius of action, utilization of clouds and the employment of new devices for aerial navigation.

(2) Capacity for maneuver and consequently the ability to undertake actions of great amplitude almost instantaneously, actions which are characterized either by rapid concentrations of considerable means over a single zone of objectives or, on the contrary, by actions divided in space and time, appropriate to the premature attrition of the hostile defense and the dispersion of its efforts.

(3) The relative ease with which it may be reorganized or even increased in size.

The essential purpose of an armed struggle is to impose upon the enemy a superior will and oblige him to sue for peace, either because he no longer has the ability or the will to fight. This may be achieved by disorganizing and demoralizing his country, by attacking not only his armed forces but any other vital part. Attack and defense of the various "means of existence," therefore, often will take precedence over action against the armed forces, particularly at the beginning of hostilities and during phases of stabilization on land. It is only the air arm that can exert direct action against the hostile combined economic organization; centers of production, transports, and supplies. The population itself, considered up to now as non-combatant, will not be safe from this menace and its morale may be broken even if lives are not lost. In the struggle against the military forces the air arm can extend its operations to include the means of mobilization and concentration and the supply of both land and naval forces.

The active defense against air attacks requires the coordinated employment of all available means, distributed over the entire area to be covered. These means include pursuit aviation, antiaircraft artillery, protective balloons, machine guns, searchlights and other agencies. A general sentry and alarm service should be provided to alert these means and enable the command to provide for the coordination in depth of the combined defensive system.

Regardless of the situation, this action can constitute merely a parry, characterized essentially by the unavoidable dispersion of means on the ground for the purpose of affording permanent protection to every vulnerable area and by the limited nature of pursuit aviation caused by the high speed of enemy planes and the time required for the transmission of alarm signals. The technical or tactical means, even though of superior quality, will appear weak in comparison with the brilliant advantages of the aerial offensive. It is these advantages that should be turned to profit, even to the prejudice of the aerial defense of our territory, by making the main mission of bombing aviation the attack against the air forces at their bases.

There must be a systematic attempt to gain aerial superiority in as short a time as possible. Pursuit aviation, in addition to maneuvering against enemy air raids, must reconnoiter and attack the enemy air forces at their bases.

There can be no success on the ground if the enemy is master of the sky above. To guarantee mastery of the air requires that a single air command be able to provide the necessary concentration and regulate aerial operations in their entirety; liaison and observation missions necessary for the employment of the other arms must be prevented from falling an easy prey to enemy pursuit planes.

Constant aerial exploration makes strategical surprise increasingly difficult. If, however, such a surprise is realized, the air forces could come into action almost immediately and render much aid in warding off the attack, pending the arrival of ground forces. As a rule, bombing will be employed to prevent the enemy from reorganizing and to harass his communications and railroads. We may expect that actions against the latter will deprive us of a part of the means necessary for combat, and at a time when they are most needed. The extension of the zone of influence to include ground forces not engaged at the front will have a telling effect on the rest and morale of the reserve troops.

Naval forces operating on the surface continue to dominate the seas, but in order to do this the great naval powers have been obliged to make allowance for aviation in the composition of their forces. As on land, the mastery of the air over the sea can be only local and temporary. As a protection to convoys it will be indispensable; for convoys in narrow seas, near coasts or ports hostile aviation will constitute a serious menace. It is in the action along the coast that aviation has introduced new and important elements. It furnishes an effective and rapid aid in case of an attempt to land and a menace to the hostile naval bases. The success of aerial surprise is greatly enhanced if coordinated with the general operations planned.

Aviation must be charged with the general mission of carrying the war to all branches of activity upon which the hostile force must depend. To accomplish this general mission it must prepare a list of "paying" objectives, the action against which will impair the efficiency or destruction of those agents of production which are of primary importance to the enemy. To carry out these operations under the most favorable conditions we must have general aerial superiority and in particular an efficient bombing fleet.

Since it is capable of great strategical and tactical mobility, the air force should be employed in important actions where by reason of its mass, power and concentration of efforts, it will constitute most often the main factor in the decision.

Aerial maneuver, offensive or defensive, will be based essentially upon the assignment of forces to the various missions, and each mission to various objectives. This assignment may be based on two principal maneuvers:

(1) The maneuver of fires which, depending on a given disposition on the ground, permits concentrations in the offensive; it is limited, however, in the defensive by the necessity of protecting permanently a certain number of sensitive points.

(2) The maneuver of bases which, by modifying the arrangement of deployment, permits a rapid and reciprocal reinforcement of the air forces on two distant theaters, or over two points that are at a great distance from the same theater. It requires that we be able to dispose freely of a large ground organization.

This balancing of forces will not be fully effective unless there is a unity of command which can direct the operations over the entire theater of operations.

It has become the problem of the air arm to maintain the aerial unity of an empire. This requires the possession of air bases properly distributed or the use of air bases of a friendly nation. These bases should be chosen and equipped in accordance with the various possibilities of conflict and the operations that may be expected. Though they may aid greatly in providing liaison between our imperial possessions, the aerial factor also creates a new risk in defending them.

In the case of coalitions, in order to be fully effective, the parties of the coalition must make concessions to the demands of aerial unity.

If aerial operations can aim at objectives independent of those of land or naval operations, they should confine their achievements to the accomplishment of the main purposes laid down for the general conduct of the war.

The choice of general combat missions to be assigned to the air forces is within the jurisdiction of general strategy; the operations performed in their execution are within the jurisdiction of aerial strategy, as well as that of air combat proper. In the field of general strategy the conduct of the war constitutes a whole, there must be a single superior directing agency for its preparation, and a single command for its execution.

In the preparation it is the government which must fix the purpose to be achieved and the military organization to be realized. It is likewise the government, in agreement with the high command, which should decide upon the plan of war. Taking this plan as its basis, the command will strive to cause the armed forces to put it into effect. A country should provide an army as suggested by its plan of war and its plan of war should correspond to this army.

During the development of the general scheme of maneuver certain general instructions are given to the commander of the air force. He in turn develops his plan of maneuver and anticipates the unfolding of the initial operations. Instructions are then turned over to the subordinate commanders, fixing in particular their missions, zones of action and objectives.

"We cannot make proper use of the ground forces or the surface forces of the navy unless we are able to dispute vigorously the mastery of the air with the enemy," says Admiral Castex, director of the *College de Defense Nationale.*

In the field of general strategy there seems to be no doubt that a new war necessarily would not have the same characteristics as the last one and that the whole country would be considered as an objective of war. The great efforts which some countries are making in the preparation for defense against attacks from the air confirms the exis-

tence and the importance of this danger and enables us to appreciate its extent.

For a long time this aerial danger was largely psychological; the birth and development of the German air force, however, have caused this danger to pass from the psychological field to the field of reality. Within less than three years, through a veritable technical surprise, Germany has realized the desired instrument of domination, one that is modern, improved and "kolossal," the very thing the Treaty of Versailles aimed to deny her—an army of the air extending its threat beyond fortifications and beyond the seas, providing liberty of action and, as a corollary to this, initiative in operations. Here we have a good example of what Admiral Castex has called the strategy of peace time.

In view of these facts, it is absolutely necessary that the governments and the high commands attempt to adapt the military organizations to the new needs. The increase in the possibilities of aviation has extended the strategical fields; war is no longer limited to the land frontiers; it covers the entire territory; still more, it is not concentrated particularly in Europe and empire conflicts may be more to fear than those of the homeland.

The conception of total war and the probability of its being unleashed all at once, perhaps even instantaneously, give in reality an incomparable advantage to the totalitarian solution of military organization. It is only a single authority that can, by examining the situation as a whole, with a thorough knowledge of the situation, decide upon the organization best suited to face all the eventualities and fix, with this end in view, the respective composition of the land armies, navy and air forces, by proportioning in the proper manner the means which the various sources permit us to create and maintain.

It is by adapting itself to these realities that national defense can give a cheering impression of flexibility and equilibrium; in future struggles, the fate of great powers, of empires in particular, will depend to a large extent upon the size of air forces and their fitness for use within the harmonious framework of a modern military organization.

Wide World Photo.

NEW ITALIAN TANKS CROSSING A BRIDGE IN THE VENETO UNDER COVER OF A THICK SMOKE SCREEN DURING THE MECHANIZED ARMY MANEUVERS IN NORTHERN ITALY.

Civil Mobilization in Italy

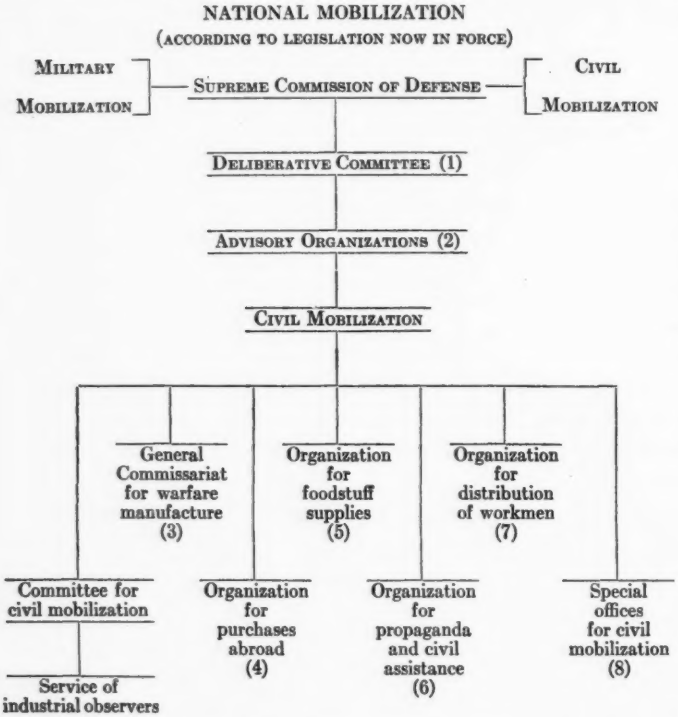
[Condensed from an article in *Nazione Militare*, July-August 1939.]

By Lieutenant Colonel E. M. Benitez, *Coast Artillery Corps*

National Mobilization, Resulting from the Mobilization of the Armed Forces and the Civil Mobilization

Since 1923 the Italian legislation has been devoting its attention to the preparation of the nation for war. This preparation has been extended to the civilian population which, in the event of war, must support the armed forces in the field.

Civil mobilization must attain in peace time a high degree of efficiency so that it may adequately support the military mobilization from the day the latter is declared and throughout its period of duration. Civil mobilization means that all the activities of the country which in peace time are devoted to the progress of civil life, must be capable of transformation, upon declaration of war, in order to supply the armed forces in the field and strengthen the internal defense and resistance. The complete organization of the country for the so-called "Integral war" is defined as "National Mobilization." The organization of the nation for war, according to the legislation at present in force, is shown in the following table:


NATIONAL MOBILIZATION
(ACCORDING TO LEGISLATION NOW IN FORCE)
Military Mobilization
Supreme Commission of Defense
Civil Mobilization
Deliberative Committee (1)
Advisory Organizations (2)
Civil Mobilization
General Commissariat for warfare manufacture (3)
Organization for foodstuff supplies (5)
Organization for distribution of workmen (7)
Committee for civil mobilization
Service of industrial observers
Organization for purchases abroad (4)
Organization for propaganda and civil assistance (6)
Special offices for civil mobilization (8)

(1) Includes: members with deliberate vote (The Duce, Ministers of Foreign Affairs, Italian Africa, Interior, Finance, War, Navy, Aviation, Agriculture, Communications, Corporations) and members with advisory vote (Secretary of Fascist party, Chief of Supreme General Staff, Chiefs of Staff of Army, Navy, Aviation, President of the Committee for Civil Mobilization).

(2) Four in number: Army Council, Admiral Committee, Technical Aeronautical Committee, Committee for Civil Mobilization.

(3) Includes 2 inspectorates (Rome and Milan) and 9 delegations (Turin, Milan, Genoa, Bologna, Florence, Rome, Naples, Palermo, Cagliari).

(4) Under Ministry of Corporations.

(5) Under Ministry of Agriculture.

(6) Under Ministry of Popular Culture.

(7) Under Ministry of Corporations.

(8) Under the various Ministries.

In order that National Mobilization be successful, the following three fundamental requirements must be fulfilled:

(1) Unity of Direction—The Government establishes the general basic rules in accordance with which it utilizes all the elements which form the "national power" for the purposes of destroying the enemy (military mobilization) and to protect the life of the nation (civil mobilization).

(2) Continuity of Action—This is indispensable to insure success, in war time, of the organization already prepared in peace time. Therefore, in order to eliminate the crisis that takes place at the moment when the nation passes from peace to war, it is necessary that the same organization that took care of national mobilization in peace time, will carry out the mobilization at the required moment.

(3) Utilization of Competent Organizations and People—Since in time of war the government will retain in its hands the supreme direction of the life of the nation, it must be able to utilize to a maximum degree *all* competent organizations and people in every field of national activity. The "Corporative Organization" of the nation will fully satisfy this requirement.

The Supreme Commission of Defense and its Organization

The Supreme Commission of Defense is founded on the three fundamental requirements mentioned above. It coordinates all problems concerning national defense and establishes the regulations for the exploitation of all national activities for the benefit of national defense. The Supreme Commission of Defense includes a "Deliberative Committee" and a number of "Advisory Organizations" as shown in the table above.

For civil mobilization, the Supreme Commission of Defense avails itself of the following two specialized organizations:

(1) Committee for Civil Mobilization—an organization for the study of all questions in connection with the utilization of all national activities, and with the organization and employment of the resources necessary for war.

(2) Service of Industrial Observers—a technical organization supplying the Committee for Civil Mobilization with all elements necessary for its studies. It watches the activity and production of the various industries of the nation (equipment, workmen, technical capacity, production) with a view to their contribution to military armament. It is charged with the preparation of a census of national industries and the preparation of mobilization plans of the single industries.

From the point of view of technical work, industrial observers are divided into six categories: Mechanical, Aeronautical, Electrical, Chemical, Logistic and General, which correspond to the groupment of the principal national industries of the country.

Civil Mobilization—What it is and How it is Carried Out

Civil Mobilization, as defined by the Supreme Commission of Defense, consists of "the transformation of the peace-time organization of all national activities, except the armed forces, into an organization for the time of war. It is based on the obligation on the part of all citizens, men and women, to assist in the moral and material defense of the nation. Therefore, all citizens are subject to a 'War Discipline'."

The World War demonstrated that:

(1) Modern warfare not only engages in the struggle of all armed forces, but also all national activities, of all kinds.

(2) Consequently, the resistance of the nations and their industrial and economic organization constitute an essential element to support the armed forces; therefore, the outcome of a war is affected by the moral and material organization of the nation, and in particular by its capacity of production in relation to the number of men and means operating in the field.

(3) All other conditions being equal for both belligerents, a nation is capable of winning the war when it can supply not only its armed forces as the need arises, but has also available large reserves of raw materials necessary for war and for the life of the nation so as to raise to a high level the limit of resistance of the people.

(4) A nation like Italy, which feeds its industries and its economy from abroad and from beyond the sea, must be already organized, in peace time, so as to be able to exploit all national resources and to have available in the country those reserves which are indispensable for war-time production and economy.

As a result of the above, the following elements have been taken into consideration for the preparation of Civil Mobilization:

(1) Persons and the best possible use of their qualifications, based on the principle that "everybody," including women and minors, must concur in the collective effort, within their possibilities. Thus a "moral mobilization" is enacted, including:

(a) Moral and disciplinary preparation of the civil population (principles of discipline, responsibility and individual sacrifice), with the right on the part of the government to request individual and collective services. This includes the civil mobilization of workmen and employment of war prisoners, as well as mobilization of directive and technical-administrative personnel required for running the "fundamental" and "auxiliary" industries, as well as other principal national activities.

(b) Cultural preparation, trying to develop in certain fields special studies and knowledge so as to improve production in the interest of defense and resistance of the nation. This includes, for instance, military culture which is now compulsory in schools, special training of graduated women for telegraphic, telephonic and radio services; training of blind people for antiaircraft listening devices; and in general, training of disabled and physically unfit men for certain special jobs.

(c) Organizations for propaganda and civil assistance, both within the country and abroad.

(2) Supplies, and particularly mobile and immobile goods, of interest to national mobilization in that they are valuable to insure the action of the armed forces and the continuation of the moral and material life of the nation. The government may impose certain limitations or requisition them. Therefore, it may carry out special census or experiments in peace time.

Mobilization of means may be considered as:

(a) Financial mobilization, including all laws and rules intended to safeguard the economic power of the country through its financial organizations (foreign exchange and currency, credit, banks).

(b) Commercial mobilization, aiming at evaluating raw materials existing in the country; keeping in mind foreign commercial centers and their importance; estimating possible supplies from abroad, via land or sea; negotiating with other countries commercial treaties, and compensation agreements; organization, supply and consumption, and controlling the latter by determining which items must be rationed, on the basis of studies made by the competent Ministries (food organization).

(c) Industrial mobilization with the following basic scope:

During the initial period (at the beginning of military mobilization and even before): supply the armed forces with all equipment for mobilization which was not available.

After the initial period (or contemporaneously): to bring the national production to such a level as to be able to compensate (if possible with a certain active margin) for the probable monthly losses and attrition in war time.

From the point of view of production, industrial mobilization is divided into:

Mobilization of the resources of the soil.—To obtain maximum output and rational exploitation of the natural resources of the nation: on the surface of the soil (agriculture) by improving the methods of cultivation, increasing the use of machines, scientifically exploiting the hydraulic power in the mountains, increasing the number of animals in the country; underneath the soil, by developing the extraction industry in general and the mining industry in particular.

Mobilization of manufacturing industry.—Rapid and complete transformation from peace-time to war-time production. Therefore it requires perfect knowledge of the kind of peace-time production and the necessities of war-time manufacture, and a complete preparation of documents and instructions that shall make the transformation easy.

Also in this field, the World War taught the following points:

The armed forces of modern powers need in war time such a large quantity of materials of all kinds that, in spite of the size of the reserves laid aside in peace time, they are invariably sufficient for the initial period of hostilities only.

As State and private plants are insufficient for the production of necessary supplies, a larger number of other pri-

vate plants normally engaged in the production of other products, must be called to contribute. This requires transformation and expansion of these plants, as well as the erection of new ones.

For all such private plants (designated as "Auxiliary") the government must insure the means of production (direction, raw materials, power, machinery and workmen) as well as the productive processes and apparatus which must be prepared in advance so that the quantity, quality and dates of consignment may be guaranteed.

Good will and patriotism of all citizens together with the proper legislation are not sufficient to secure all the above objectives; it is necessary for the government to intervene with its own organizations in order to direct and supervise all phases of the preparation and those of the execution of warfare production.

As far as preparation in time of peace is concerned, the organizations concerned are those already mentioned: the Committee for Civil Mobilization and the Service of Industrial Observers. As far as the supervision of warfare production is concerned, the creation of "an organization charged with the supervision of warfare production, subdivision or raw materials and industrial products, control of state and private plants" is foreseen by Italian legislation, to take place as soon as the necessity arises.

At the beginning of the Abyssinian campaign, this organization, called the "General Commissariat for Warfare Manufacture" was created, under the Head of the Government, President of the Supreme Commission of Defense. Its task was to "discipline and control all activities concerned with warfare manufacture, as well as the employment of means and personnel pertaining thereto." The Chief of the Commissariat was the President of the Committe for Civil Mobilization.

Organized on those bases, the industrial mobilization will take place approximately as follows:

(1) Census of the possibilities of the country in order to be able to evaluate its industrial power (task of the "Service of Industrial Observers").

(2) Calculation of the "needs" of the armed forces, with view to completing their organization for war, and to take care of the average monthly consumption in a given period of time—month or year—and therefrom the amount of raw materials, raw and semi-finished products required, together with an estimate of necessary power (electric, thermic, hydraulic) and men/hours (task of the Military Ministries).

(3) Corresponding definition of the situation—in relation to the assumed average consumption (per month or year)—definition of the required raw materials (to be indicated to the organizations of the commercial mobilization) —and definition of the required raw and semi-finished products, power, number of men/hours necessary for the finishing of the products (fundamental elements for the qualitative and quantitative subdivision of warfare manufacture among the available plants and establishments of the various categories of industries).

(4) Eventual measures concerning improvement in the equipment of industrial plants in order to improve their production, and creation of new plants, as well as removing from the advanced zones those plants which can be set up in a different locality.

For the said plants, determination of the number of workmen to be replaced by disabled men, women and children; determination of the time limits for such replacement, in order to avoid a decrease in production.

(5) Measures for favoring in the industrial field "normalization" which is a great help for quantity production, with a resulting simplification in machinery and equipment, and a better rate of production, very valuable in case of intense warfare production.

(6) Measures directing that the technical organizations of the armed forces study and define military equipment and materials well in agreement with available raw materials existing in the country and in accordance with the rules of "normalization" mentioned above, so as to be able to utilize semi-finished parts of current use for quantity production.

(7) Preparation of complete series of blue prints of military materials, to be continually brought up to date, so that at the moment of need they will be ready for use, and for distribution to the industrial plants.

(8) Assignment to the plants concerned of calibers and others gauges necessary for the test and checking of products to be manufactured; instruction of personnel in peace time so as to have already available, in an emergency, a complete organization of personnel for the test and acceptance of warfare materials.

(9) Contribution of the most important technical institutions of the nation to the studies concerning the armed forces (National Research Council, R. Academy of Italy, technical organizations of universities).

The above fundamental principles which will be logically the basis for the organization of industrial mobilization have already been tested out twice: first during the World War, and again during the Abyssinian campaign.

The magnitude of the problem is indicated by the following figures of production and consumption of munitions during the World War:

Item	*Consumed May 24, 1915 to Nov. 4, 1918*	*On Hand Nov. 4, 1918*	*Total Production*
Ammunition for portable arms	3,000,000,000	660,000,000	3,660,000,000
Trench mortar rounds	3,700,000	3,600,000	7,300,000
Hand grenades	10,400,000	12,000,000	22,400,000

During the period May 1915 to November 1918, civilian industrial establishments classified as "auxiliary" for the manufacture and processing of war materials and subsidiary items increased from 39 to 1981.

The production and consumption of artillery rounds is given in the following table:

	Consumed May 24, 1915 to Nov. 4, 1918	*On Hand Nov. 4, 1918*	*Total Production*
Light Artillery	35,300,000	17,600,000	52,900,000
Medium Artillery	11,500,000	5,800,000	17,300,000
Heavy Artillery	328,000	338,000	666,000
			70,866,000

CHINESE GUERRILLAS OF THE 4TH GUERRILLA ZONE ACTIVELY HARASSING THE JAPANESE INVADERS IN SOUTHWEST KWANGTUNG. *Acme.*

Guerrilla Warfare and Motorization

["Motorisierte Gedankensplitter aus aller Welt: Der Guerillakrieg und die Motorisierung," by Lieut. Colonel Braun. Condensed from *Militär-Wochenblatt*, 18 November 1938.]

MAJOR WM. H. SPEIDEL, *Infantry*

The Chinese irregulars, also referred to in the foreign press as "partisans," are giving the Japanese plenty of grief. They destroy bridges, set fire to gasoline and stores, commit violent assaults on people of importance, explode mines, raid troops, staffs and airports, even entire villages, incite rebellion, gather important military information which keeps Chiang Kai-shek constantly informed, and in an astonishing manner appear and disappear like ghosts. We only get meager information about their highly interesting fighting. Their organization, hastily carried out, lacks unity. Their weapons and sometimes their teamwork are poor. Their sacrifices are great (there is no mercy in guerrilla warfare), but still they have successes to their credit.

We have heard recently that some of these shock troops have armored scout cars, cargo trucks, motorcycles and light motorized guns. On 5 August 1938 one group blocked the Peking-Tientsin highway at several points; another wrecked a large railway bridge and kept the place under fire for two days. Right near Peking on 29 August 1938 a train was blown up. This news gives us some idea how motorized troops and vehicles might be used in guerrilla warfare. In future wars this style of fighting might assume other forms, such as parachute landings.

The important point is fuel. A country that wants to organize guerrilla warfare behind the enemy's front must first provide a supply of gasoline. It must be stored in small quantities, decentralized as much as possible and secured against deterioration and discovery, the storage place plotted on maps and entrusted to the care of responsible civilians (a well-planned guerrilla warfare in its greater proportions is, of course, only possible in one's own country and under the support of the population, as is the case in China). Motorized troops greatly enhance the increased efficiency

of the "partisan" detachments. Light, hill-climbing, scout cars, organized in at least two sections, are an important consideration. They should be assigned to quick raids, appearing and disappearing suddenly, and again appearing at widely separated points, to reconnoiter and insure security. Motorcyclists, equipped with highly efficient machine guns and demolition material, are assigned to independent, long range missions involving small fights such as raids. They should have at least one truck for baggage.

Propaganda troops on fast, cargo trucks or motorcycles are valuable in maintaining the fighting spirit of the people, intercommunication, liaison with our own air force, and transporting plunder, wounded, and weapons for distribution to civil guard detachments. We have seen pictures showing that a larger portion of the Chinese detachments, that first fought against the Japanese, were still equipped with flintlocks and even spears and clubs, a situation that would make small impression on the modernly equipped Japanese Army. Recent Japanese newspapers report that 27 guerrilla divisions (not to be compared with European divisions) were assigned to destroy the North-South Railway.

The most difficult part of guerrilla warfare is command and coordination. Great success depends on incorporating all the acts of bravery of single detachments, often separated by several hundred miles, into a common cause. But such a leader and the means of communication are hard to find. Aircraft, motorcycles and modern radio equipment would be very advantageous, but these are scarce articles in China.

Tanks, at least medium and heavy, large cargo trucks, heavy scout cars and tractor artillery have scarcely a chance behind the enemy front. In addition to consuming too much gasoline, they are difficult to camouflage and conceal.

The following is in my opinion the ideal of a motorized guerrilla organization. It should appeal to every courageous soldier thirsting for independence and freedom:

Strength: 1 motorized company of 4 platoons. The first a motorcycle platoon with light machine guns. The second a pioneer platoon with considerable demolition material and chemical equipment. The third a scout car platoon with communications, and aircraft liaison troops. The fourth a cargo truck platoon with repair equipment, spare parts, fuel, subsistence, clothing, ammunition, as many weapons as possible, and replacement trucks. Also a strong company section with motorcycles, 2 light armored cars and reserve drivers. Guns, depending on the situation, drawn from the guerrilla battalion. Consider only very mobile guns, drawn by hill-climbing armored trucks. To avoid breakdowns, trucks should be constructed of very serviceable material.

Such an organization can be employed as one unit or as the situation demands, in the form of reinforced platoons, squads and patrols.

Every platoon should have about five squads and be proportionately strong. Its method of fighting is about as follows: marching at night, through fog and bad weather; fighting at dawn and dusk or in fog; keeping concealed and scouting with weak, inconspicuous forces during daylight. Troops required to walk or ride horses will not be as effective as motorized troops, when the terrain favors motorization.

Replacements of casualties must be provided for locally, when impossible to introduce them by means of parachutes. Every replacement must furnish at least a bicycle, still better a motorcycle, or else he is useless.

Motorized organizations larger than a battalion (4 of the above companies) are too unwieldy for guerrilla warfare. In its own territory each battalion should operate something like a pursuit wing, or like a submarine flotilla fighting in the enemy's shipping lanes. Freedom of action is fundamental. Somewhere in the center of the area might be the very point or line which is the desired objective. The Japanese oppose the guerrilla troops with flying columns, partially motorized or mechanized. They usually succeed, as they are far superior to the Chinese hordes, especially in weapons. Still, the enemy is highly dangerous and harmful. Very strong forces are being taken from the front and reorganized in the interior. The advance is delayed considerably. Early in September 1938 a regular Japanese division was landed east of Tientsin as "counterguerrilla" troops. In the lines of communication in China there has developed unrest and insecurity, pilfering of supplies, and heavy losses consequent to the shifting of forces and—what is perhaps the hardest to bear—in the conquered areas efforts to develop a friendly attitude toward the Japanese has been unsuccessful.

Experiences gained in China do not necessarily fit European conditions. Still, one might conclude that guerrilla warfare will have its place elsewhere in another form with other means, and that there will be considerable demand for the cooperative effect of ground and air forces.

Military Causes of the Polish Defeat

[Condensed from an article in *Krasnaya Zvyezda* (Russia), 26 December 1939.]

By Lieutenant Joseph Dasher, *Military Intelligence Reserve.*

Insufficient equipment in all modern weapons was the paramount cause of the Polish defeat.

The Polish infantry division disposed of only 18 antitank guns, while the German division—according to Polish information—had 72 such guns. The difference in antiaircraft artillery was equally as great, for while the Polish infantry division had 4 antiaircraft guns, there were 12 such guns in the German division, according to Polish sources.

These marked differences in strength could have been partially reduced by the Polish command had it been able to muster a sufficient quantity of tanks and armored vehicles, but in this regard the German army was also superior. In

addition to the tank battalions reinforcing their infantry divisions, the Germans disposed of special tank units, numbering hundreds of vehicles. It is significant here, that not one of the Polish divisions had a tank battalion within its basic organization, and the entire Polish army had but 12 to 15 tank battalions. In addition to this, the Poles used a tank of a light, reconnaissance type, armed with two machine guns, which was no match for the German tanks carrying field guns in addition to machine guns.

In the realm of field artillery, and especially in heavy artillery the superiority was all on the Germans' side. The Polish infantry division had only one artillery regiment, composed of three battalions. Additional battalions of heavy artillery were in the stage of being formed when hostilities began, and consequently not all of the infantry divisions disposed of these additional units. On the other hand, every German infantry division had two artillery regiments, of both light and heavy caliber. Also, the German command was able to reinforce the infantry divisions with the necessary heavy artillery, drawn from the corps artillery and the GHQ artillery reserve, which the Poles could not duplicate. There were 11 heavy artillery regiments, and but 2 regiments of the heaviest "siege type" guns in the entire Polish army.

The Polish air force was well equipped with aircraft of the most modern type, such as, for instance, the "SUM" light bomber with speed of 280 miles per hour, and the "WILK" pursuit ship with speed of 300 miles per hour, and would have been able to offer stern resistance to the German air force had it not been for the fact, that at the very outset of the war all of the Polish airdromes and much of the aviation matériel were bombed and destroyed, which assured the Germans complete mastery of the air.

Serious shortcomings were discovered in the organization of the Polish command. One of the more serious errors was the absence of corps staffs, whose need had been felt even during peace time. It is now known that the Polish command formed so-called operative groups consisting of several infantry divisions and cavalry brigades, reinforced by tank units and heavy artillery. The staffs of these operative groups were not always well coordinated or capable of directing action under the complicated conditions of modern warfare. The lack of sufficient liaison elements proved to be a most unfavorable factor. Only one signal company served an entire infantry division.

For many years the Polish military doctrine anticipated a war against the U. S. S. R. and not against the other of Poland's neighbors. As a consequence there was a notable lack of fortifications along the borders of Poland, excepting that with the Soviet Union, which latter frontier was strongly fortified. The building of Poland's strategic railroads was also based on the probability of a Soviet-Polish conflict.

When the war with Germany became inevitable the Polish General Staff was deprived of sufficient time for adequate readjustment.

Although the foreign press had repeatedly reported that Polish plans of defense were known to the Germans, the Polish high command did not find it necessary to change these plans, and the German forces took the fullest advantage of this, which explains the wide enveloping movements of the German army. The strongest German blows were directed against the most vulnerable points in the Polish line, causing same to break, and leading to the encirclement of the hastily formed operative groups.

Contact between the several operative groups of the Polish army was thus seriously disrupted and no appreciable resistance could be organized. All Polish efforts in this direction were predestined to fail, because it was futile, indeed, to attack German tanks with large units of cavalry, as the Poles did at Czestochowa, and during the Polish raid into East Prussia.

The Polish cavalry force, consisting of 40 regiments organized into separate cavalry brigades, was poorly equipped in certain essential weapons, such as antitank guns and antiaircraft guns, and it was not sufficiently supported by aviation and tanks.

Not the least of the several reasons of the Polish defeat is to be found in the highly unfavorable outline of the Polish-German borders, with their projecting salients, which placed the forces in them in immediate jeopardy of being encircled. This was vividly illustrated in the creation of the so-called "Posen sack" where 10 Polish divisions were trapped. In addition to this, none of the most important of Poland's political and industrial centers had an adequate antiaircraft defense system, although any locality in Polish territory could be easily reached by enemy aircraft.

In the future, other ambitious men will bring about new wars and more disasters to mankind, for it is a peculiarity of men that they will not learn by experience. The follies committed by fathers are not heeded by the sons. Every generation must make its own experiences.

—FREDERICK THE GREAT.

Book Reviews

THE BOOK OF WAR

The Military Classic of the Far East

Translated from the Chinese by CAPTAIN E. F. CALTHROP, R.F.A.

132 pages . . . London: John Murray

Reviewed by Major Wm. H. Speidel, Infantry

"Written in the fifth century B.C., Suntzu and Wutzu still remain the most celebrated works on war in the literature of China. While the chariot has gone, and weapons have changed, these ancient masters have held their own, since they deal chiefly with the fundamental principles of war, with the influence of politics and human nature on military operations; and they show in a most striking way how unchanging these principles are."

The above is quoted from the translator's introduction, which in itself is an excellent review of the book that would challenge improvement. This is a rare volume that has been recently acquired by the Command and General Staff School Library. Those who are interested in studying the underlying principles which govern the art of war and the source of the oriental attitude in its particular application of these principles, will find it interesting, refreshing and cultural.

" For, while quick accomplishment has been known to give the victory to the unskilful, the skilful general has never gained advantage from lengthy operations."

" If a victory be gained by a certain stratagem, do not repeat it. Vary the stratagem according to circumstances."

"Weak and amiable generals, whose directions and leadership are vague, whose officers' and men's duties are not fixed, and whose dispositions are contradictory, produce confusion."

" Men meet their death from lack of ability or unskilfulness. Wherefore training is the first requirement of war. One man with a knowledge of war can teach ten; ten men skilled in war can teach one hundred; one hundred can teach one thousand; one thousand can teach ten thousand; and ten thousand can train an army."

These quotations are but a sample of the many maxims which the book contains, truths that are as applicable to the military profession today as they were in the fifth century B.C.

GAS IN THE NEXT WAR

BY MAJOR-GENERAL SIR HENRY F. THUILLIER

180 pages . . . London: Geoffrey Bles

Reviewed by Major M. D. Barndollar, Infantry

A number of books, intended primarily to enlighten the British public on the various aspects of modern warfare, have been written recently and published in series form edited by Captain Liddell Hart. Each volume has been prepared by an expert in his particular field. *Gas in the Next War* is the contribution of Major General Sir Henry F. Thuillier, who, during the World War, was Director of the Gas Services at G.H.Q. in France and later Controller of the Chemical Warfare Bureau of the Ministry of Munitions.

It attempts to present a well-balanced judgment on the question of the use of gas in the next war and to dispel some of the fears resulting from the imagined horrors of gas warfare. A history of the use of gas in the World War is given in order to forewarn the British public what it may expect in a future war. An analysis of the casualties in the World War caused by gas, leads him to the conclusion that gas warfare is the least inhuman method of waging war.

As no ethical grounds exist for the abolition of the use of gas in warfare, it may be expected that it will be used in future wars. It is possible, however, that the opposing powers may be two highly industrialized nations, each capable of producing a variety of war chemicals and accessory equipment. For this reason it is quite likely that both parties will refrain because the use of gas will favor neither with any profitable advantage.

The effect of gas attacks upon the civilian population is questioned, even though the resulting panic may produce casualties. The use of high explosive bombs has a far greater effect. Education of the public in gas discipline will go far toward reducing the number of casualties.

This book should have a marked effect in dispelling, or reducing many of the exaggerated and fantastic horrors developed by the imagination of the sensational and alarmist writers.

STALIN

BY BORIS SOUVARINE

690 pages . . . New York: Longmans, Green & Co.

Reviewed by Major Wm. H. Speidel, Infantry

Boris Souvarine, a former member of the Executive of the Communist International, refers to his biography of Stalin as *A Critical Survey of Bolshevism*, and so it is, a triptych of the three great ikons of Bolshevism — Lenin, Trotsky and Stalin. with the latter portrayed upon the central and principal panel, but all three greatly overshadowed by the immense background depicting the Soviet revolution in the process of its development down to the present time. We search the perspective behind the central figure and find it very obscure. Perhaps there was little material available to stimulate the imagination of the artist. In fact, the author believes that Stalin suppressed the record of his early life and that, after he came to power, he largely controlled it. This may account for the almost total absence of documentation, for the omission of footnote references. The book, however, is well indexed, and for this reason its use as a ready reference on the Russian revolution and the principal characters who participated in it will prove invaluable.

Mr. Souvarine presents a critical analysis of the evolution of the Russian people from a free society into a totalitarian dictatorship. "One by one Lenin's fundamental October theses were abandoned." Realize the historical significance of this attitude in its present day application. The Bolshevist theory, initially promulgated by Lenin, consisted simply of whatever Lenin personally believed was the opportune policy to follow at the particular moment. Gradually, but firmly, he assumes an attitude of infallibility, that eventually paved the way for the supremacy of Stalin.

SURVIVAL
Through War and Revolution in Russia

By D. Fedotoff White

395 pages . . . Philadelphia: University of Pennsylvania Press

Reviewed by Major Wm. H. Speidel, Infantry

In this thrilling narrative Mr. White relates his experiences from the time he was five years old, living under the influence of a devoted father who at that time had been a Chief Gunnery Officer in the old Imperial Russian Navy, to his final exodus into Finland. It was quite natural that he should follow the career of his father and even adhere to it with loyal devotion during the first months of the Revolution, in spite of the precarious conditions which he and his fellow officers were obliged to face. But loyalty to the old cause won out and the young naval officer went over to Kolchak and followed his forces into Siberia. Then came imprisonment by the Bolsheviks, who later released him and gave him civil employment. Finally he escaped from Russia via the Finnish border.

Due to his tolerant attitude he was extremely popular with the members of the crew, a fortunate circumstance which served him well on several occasions. This popularity is evidenced particularly during the events that followed the mutiny among the Baltic Fleet personnel. The author and many of his fellow officers, in the face of trying circumstances, made every possible effort to maintain the fighting efficiency of the fleet. In the end, however, the Bolsheviks seized control, and conditions arose which forced these officers to abandon their positions.

The narrative is written in a clear, readable style. At times it is delightfully picturesque. Political opinions are reserved for the reader's own conclusions. Although the story is ushered in with a tragedy at sea, the over-sensitive need have no qualms about being shocked with scenes of horror.

ROAD TO EMPIRE
The Life and Times of Bonaparte the General

By Fletcher Pratt

346 pages . . . New York: Doubleday, Doran & Company, Inc.

Reviewed by Major Wm. H. Speidel, Infantry

The *Road to Empire* is a literary reconstruction of that opportunely but skilfully built highway, that served as Napoleon's road from the period spent as the protegé of Barras, to the day he became the First Consul. Mr. Pratt has given us history, at times intimate and delectable, in a style that will appeal to those who are partial to fiction.

From the frivolous and demoralizing salons of Paris the impetuous young Napoleon is ejected by the Directory into the Italian campaign. And here begin the military operations, to which more than half the book is devoted. We see Schérer's replacement emerge as the first military leader who, in his age, "dared to think on the grand scale."

Mr. Pratt has introduced a novel technique, ending the essential chapters with what he calls "Wrong end of the telescope" and "Worms eye view"—accounts from contemporary sources, and those of actual eye-witnesses. He finds much that is analogous to what is transpiring in Europe today.

Students, whether they are interested in the character of the man or his early campaigns, will find this book refreshing. Often presented in aspects differing from the usual conception, he reaches a brilliant and glorious climax—"The sword had been lifted once too often; now it was master."

SEA POWER AND TODAY'S WAR

By Fletcher Pratt

237 pages . . . New York: Harrison-Hilton Books, Inc.

Reviewed by Major Wm. H. Speidel, Infantry

Fletcher Pratt has grown into a military historian of marked ability. Some of his critics have referred to him as an amateur entering the ranks of the professionals. The story of Napoleon, the accounts of his Italian and Egyptian campaigns which laid the pavement of the *Road to Empire*, is neither amateurish in its literary style, nor in its treatment of military history. Again the author has presented a book that will justify his reputation as a perservering student of the profession of arms. This time, however, he devotes his talents to a "purely technical study of the strength of the sea powers and of their tactics and strategy in the event of a general war." Written during the summer of 1939, *Sea Power and Today's War*, arrives at a time opportune and ripe for greedy consumption.

Mr. Pratt gives us an account of the capacities and limitations of the navies of the leading powers. We become acquainted with various types of fighting ships, airplane carriers, torpedo boats and giant bombers. He attempts to answer many of the popular questions pertinent to Germany, England, France, Italy and Russia. In his concluding chapter he makes some interesting inferences on the character of the next sea war. He claims "that many well-informed naval men predict an entirely new and more open system of tactics during the next big naval battle," but that they "may be all wrong about ranges." "Battle ranges depend ultimately upon weather and visibility; and still more upon the kind of battle being fought. Even in the battle of mutual confidence, portions of the line are certain to be shrouded in smokes temporarily as ships get hit and seek respite from too-accurate enemy fire, or work toward surprise manoeuvres, or hide from aerial attack.

"The battle of desperation, by its very character, will be shrouded in obscurity as dense as the weaker party can make it; for obscurity produces accident, and only by accumulated accidents can that weaker party hope to reverse the balance against him. Particularly in European waters this invisibility is likely to bring the ranges down to 8,000 or 9,000 yards, distances at which every shell will go right through the plates, but

where there will be opportunity to fire only a few shells before the clouds shut down again.

"But in any case, only one such battle. One will be enough."

WORLD IN ARMS

A Study in Military Geography

By Major R. Ernest Dupuy

103 pages . . . Harrisburg, Pennsylvania: The Military Service Publishing Co.

Reviewed by Major Wm. H. Speidel, Infantry

By this time Major R. Ernest Dupuy, U.S. Army, needs no introduction to the reading public searching for books on live military subjects. As co-author with Major George Fielding Eliot of *If War Comes*, he established a reputation for assembling a vast quantity of military statistics, subjecting it to an *estimate of the situation*, and, in collaboration with Major Eliot, presenting it to the reading public in an interesting and readable form. Again, in the *World in Arms*, he has contributed an end product which is the result of laborious research.

Its forty-one simple, graphic illustrations, accompanied in each case by statistical data easily grasped due to its presentation in symbolic form, complete a military geography that will furnish the student, or any average reader, with any desired information on the military, naval and air strength of the principal nations of the world. The book is more valuable as an individual possession for, as situations inevitably change, the illustrations, or maps, may be brought up to date.

THE WAR BEHIND THE WAR 1914-1918

By Frank P. Chambers

620 pages . . . New York: Harcourt, Brace & Company

Reviewed by Major Wm. H. Speidel, Infantry

In this volume, subtitled *A History of the Political and Civilian Fronts*, Professor Chambers presents a study of the origins of national unity in time of war and of the methods used by each belligerent nation to maintain this unity. The book is divided into three parts. The first deals with the consideration of war needs, and gives an outline of the principal events up to the close of the year 1915. The second portrays the war at the height of its development, and its general effect on the next two years. The third treats of the final commitment of all resources, "a life-and-death struggle in which 'battle' takes a very small part."

THE ROAD TO RICHMOND

The Civil War Memoirs of Major Abner R. Small of the Sixteenth Maine Volunteers. Together with the Diary which he kept when he was a Prisoner of War.

Edited by Harold Adams Small

314 pages . . . Berkeley, California: University of California Press

Reviewed by Major Wm. H. Speidel, Infantry

This piece of contemporary history of the Civil War, edited by Harold Adams Small, son of the author, presents the Civil War memoirs of Major Abner R. Small, Sixteenth Maine Volunteers, and the diary which he kept when he was a prisoner of war. Its vivid accounts, described by an eye witness, of Fredericksburg, Chancellorsville and Gettysburg are a valuable contribution to American military history. The story of his confinement in the Libby and Danville prisons and the stockade at Salisbury contains some interesting anecdotes peculiar to the life of those prisoners who also served the Union in this restricted capacity.

"The illustrations depicting Civil War scenes are from photographs taken at the time. Two of these, which show, respectively, a corner of the Antietam battlefield and the pontoon bridge over which the 5th Corps crossed at Jericho Mill, illustrate actual passages in Major Small's narrative."

The author is most critical in his bitter attitude toward his associates, both friend and enemy, particularly in his quotation of Swift. "I understand how Swift could call men 'the most pernicious race of little odious vermin that nature ever suffered to crawl upon the surface of the earth'." But in conclusion he rejoices "that it is indelibly stamped into my being, that my sons cannot but inherit, along with their father's loyalty, some of the conclusions of a life offered in the cause of making secure, lasting, and forever free, the government under which they are living."

BEFORE AMERICA DECIDES

Foresight in Foreign Affairs

Edited by Frank P. Davidson and George S. Viereck, Jr.

318 pages . . . Cambridge, Mass.: Harvard University Press

Reviewed by Captain H. D. Kehm, Field Artillery

This book containing a series of suggestions on topics that must be considered in deciding upon an appropriate foreign policy for the United States — not America, as the title says — is unique in two respects.

First, it consists of a series of essays by recognized specialists in the fields they cover. It is a rare treat indeed to find contributions by such outstanding men as Drs. Lowell, Holcombe, Bemis, Borchard, and Major Eliot, to mention only a few, between the covers of the same book. So much literature on political affairs is being ground out by our presses that the professional man, *e.g.*, the army officer, is at a loss to pick out what is grain and what is chaff. Then, too, much of it is written for the use of specialists or students in the field and so we find whole books devoted to developing a particular key idea. This development is supported by copious confirming data and reasoning presented in voluminous chapters with numerous footnotes and annotations. The professional man with the mass of reading to be done in his own field cannot always find time to pursue such tortuous investigation. He would like to say to an expert, Dr. Lowell, for example: "Doctor, you have studied this field of government and international affairs for many years; the high positions which you have attained attest to your scholarship and good judgment. I am, therefore, ready to accept your opinions on the subject. Tell me, Sir, what do you think is the greatest need in the formulation of our foreign policies today?" In this book you can have just that. These outstanding men have given, briefly, their conceptions on the particular aspect of the larger problem in which they have done most of their work. The professional soldier can get as many

sound, stimulating ideas from this book as he could from perhaps a dozen others.

Second, the book was conceived and edited by an undergraduate organization. Harvard (especially through the Littauer Fellowships) and other leading universities, notably Yale and Princeton, have recently placed emphasis on the training of specialists in government so that there may be developed a pool of potential trained public officials. If one undergraduate group has the good sense to collect such authoritative judgments and the skill to present them as well as is done in this case, we may conclude that the idea is sound and that there is at least some hope in the undergraduates of today.

The introductory essay by Dr. Lowell and those by Dr. Eagleton and Dr. Borchard are especially worthy of consideration in the light of current public problems.

WORLD ECONOMY IN TRANSITION

By Eugene Staley

340 pages . . . New York: Council on Foreign Relations

Reviewed by Captain H. D. Kehm, Field Artillery

When the Council of Foreign Relations publishes a book it is certain to be factually accurate and prepared by persons who know what they are writing about. The military man can approach this particular book with confidence for that reason and also because in preparing his *Raw Materials in Peace and War*, Mr. Staley made an exhaustive study of our defense problems, so we may assume that his present work reflects opinions and conclusions which are conditioned, in part at least, by that study.

In the present work Mr. Staley marshals facts and pure reasoning to show: first, that technological changes are creating a need for "world-wide economic integration;" second, that political conflicts prevent the full fruition of the productive possibilities offered by modern technical achievements and that a drastic reorientation of political programs away from the nationalistic tendency must be made if this failure to take advantage of the economic benefits is not to be aggravated; third, that a mixed economic system — "partly free enterprise, partly control "— can operate successfully if it combines "social planning and competitive laissez faire" in appropriate parts of the system.

From here he goes on to discuss the restrictive influence on economic welfare of the threat of war. He points out that "power economy" is quite different from "welfare economy" and that the former is a vital threat to social progress. He also describes some of the problems created by the spread of trade, capital, techniques and the migration of men. Mr. Staley presents certain ideas on meeting these problems. All through the book runs the suggestion of need for planning, with emphasis on the international, or world, character which it should possess.

The chapter on the proper role of the United States in world economy is excellent as to the information assembled to show the vast economic power of this country. One hears many vague claims on this score. Mr. Staley presents the facts. The chapter is disappointing in its treatment of the " best use of American resources" in that there are no specific proposals — only a vague notion that we must not become economically nationalistic, but must seek a " broad program of intelligent world cooperation."

With many of the author's ideas we need not agree. Without entering into details, there are plenty of excellent factual reasons for believing that, when he speaks of human welfare, he overemphasizes economic considerations, to the neglect of religious and especially ethnic differences. So also may we believe that it would be of greater benefit to the world, if first we built sound nations before starting (as Mr. Staley would have us do) to internationalize.

There are other points in which we may not see eye to eye with the author, particularly in his manner of drawing conclusions and rendering suggestions. For his expositions of current systems and the presentation of assembled facts, however, we have nothing but praise. An illustration of the excellence of his technique in this respect is Chapter IX, dealing with the theory of laissez-faire.

For the army officer desiring a summary of the facts of any aspect of the international economic problems the book provides valuable source material. For the one who would like to mull over some challenging proposals respecting the future of our world economy there are some stimulating offers, whether they are acceptable or not.

ECONOMIC ASPECTS OF DEFENCE

By Harold Macmillan

67 pages . . . London: Macmillan & Co., Ltd.

Reviewed by Captain H. D. Kehm, Field Artillery

America's professional soldiers have no part and want no part in the formulation of national, political and economic policy. However, they must understand the economic and political aspects and requirements of the national defense programs which support the national policies our people have decided to pursue. If in some cases our civilian leadership might seem to overlook some of these " economic aspects," it might be fitting for our military leaders to suggest them to the proper authority. This need has been admirably illustrated in the matter of strategic raw materials and "educational orders" for vital industries.

The increasing complexity of the technical instruments and methods of war have required that an ever-increasing number of officers understands the " economic aspects of defence." This little volume presents a field of ideas on the whole question. Written in a clear and interesting style by a man with a good political background and, to judge from his other works (*Reconstruction* and *The Middle Way*), a good understanding of economics, the book has unusual value for the professional soldier. This is not so much because of the plans it suggests (British conditions are by no means the same as ours), but because of the picture of the integration of material economics with national defense which it paints.

The author starts out by stating that the problem of insuring that the economic machinery will fit efficiently into a war effort is a dynamic one. It is not enough to store supplies and to build machinery. These things must be used to maintain essential skills and they must be kept modernized.

His chapter on "Germany prepares" is especially good in that it presents a clear and apparently unbiased discussion of economic-military methods employed by Germany.

In describing "Britain's Task," the author starts out with the premise that, "to fight anyone employing the German method" England must "beat them at their own game." To

accomplish this he indicates that it will be necessary for Britain to organize and coordinate her foreign trade, integrate her industrial system, accumulate essential commodities, and set up a Ministry of Supply.

The Ministry of Supply would be charged with establishing production priorities, "organizing mass production," and controlling the profits of the armament industries. The writer states that there has been, as we can well imagine, great opposition to the creation of such a ministry.

In a chapter on "Freedom," Mr. Macmillan presents aspects of this question usually ignored by the so-called "liberals" who cry, "dictatorship!" at every mention of control.

In "Nationalism or Internationalism" he presents some ideas that are especially interesting in the light of the controversy over neutrality legislation now raging in our own country.

An appendix, "The Price of Peace," gives a good description of the economic and political changes resulting from Munich and illustrates the application of the author's ideas to a concrete case.

As previously stated, British conditions differ from those in the United States, so proposals suitable for English adoption are not ipso facto applicable here. In fact, one must not at all agree that his plans are necessary or feasible in a democracy. However, the American soldier who likes to ponder over the economic problems of his profession will find many of Mr. Macmillan's ideas thoroughly stimulating.

ESSENTIALS OF LEADERSHIP

I consider the following attributes as the essentials of leadership that go to make division and corps commanders. It is difficult, if not impossible, to arrange them in order of priority.

(1) Force of character
(2) Physical fitness
(3) Knowledge of one's profession, of men, and of self
(4) Courage, both physical and moral
(5) Common sense and judgment
(6) Tenacity of purpose
(7) Executive ability
(8) Last, but not least, that intangible something known as personality.

—MAJOR GENERAL H. J. BREES, *U. S. Army.*

Library Bulletin

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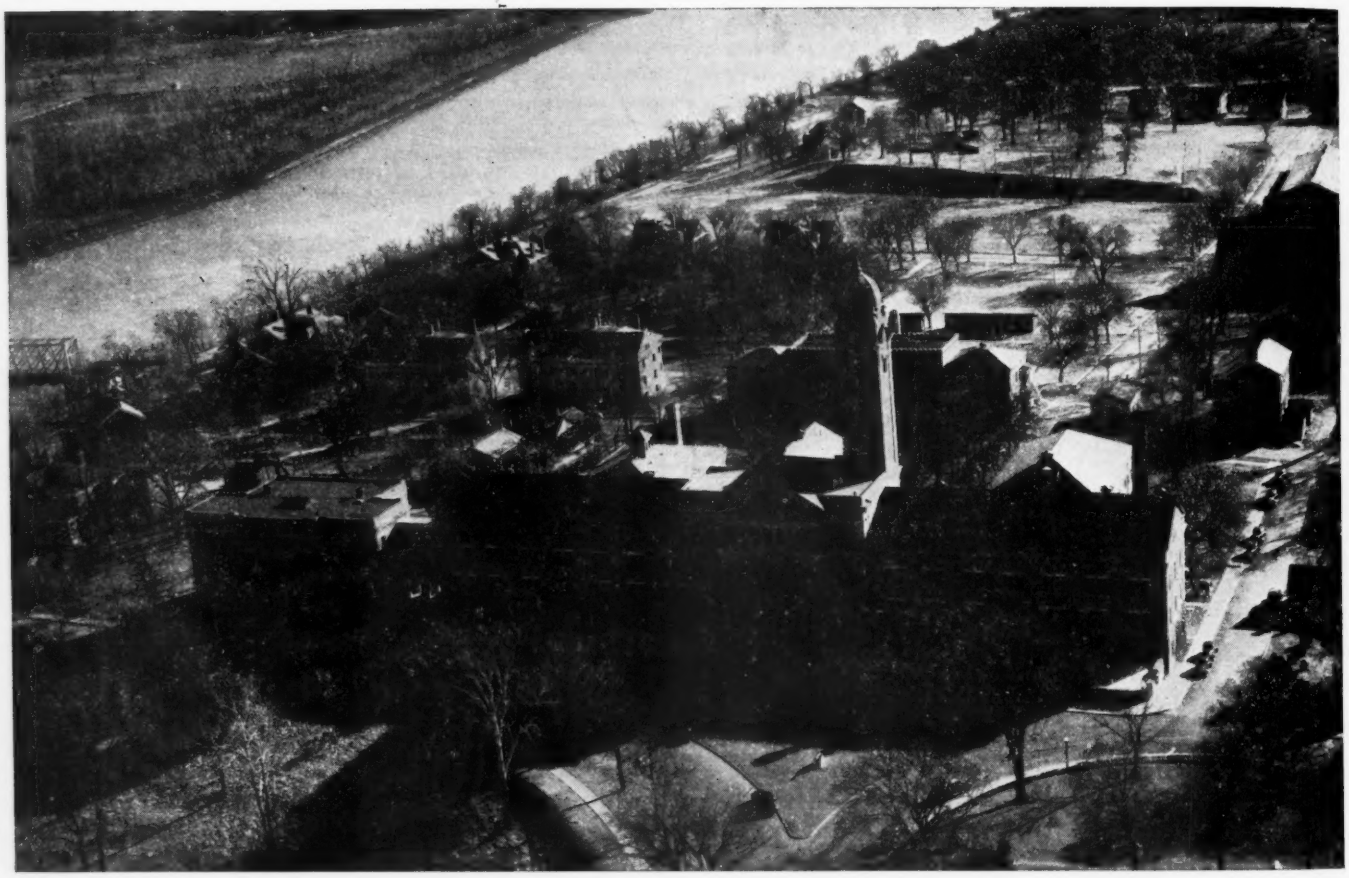

Academic Notes

Current School Material, Which Affects Instructional Procedure or Tactical Doctrines

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Infantry In Offensive Combat

By Lieutenant Colonel F. R. Waltz, *Infantry*

The Role of Infantry

The infantry is the basic predominant arm of all military forces, which carries the fight to the enemy and secures ground vital to the operation; in fact, it is the only arm, capable of close sustained combat, which can hold ground gained for an indefinite period of time. According to Training Regulations 10-5, the mission of the infantry is to secure the tactical objectives required for carrying out the army mission. This mission cannot be accomplished in modern warfare without the combined assistance of the auxiliary arms and services; yet, if for any reason the infantry fails in its important mission of seizing and holding ground vital to the operation, the battle is lost, regardless of the efforts and the efficiency of the other arms. For this reason, officers of all branches should be personally interested in the maintenance of infantry efficiency and morale and all division and higher commanders must take the necessary steps to insure that their infantry is physically fit, well organized and equipped, thoroughly trained, skillfully led, and highly imbued with courage, initiative, and the will to win or die. "Hell or Hoboken by Christmas" was no idle threat in 1918, and that same spirit in the assaulting infantry is even more essential today in view of the increased power of the defense.

Bases of Infantry Tactics

General

Needless to say, the tactics of infantry must be based on its inherent characteristics and its prescribed organization and equipment, as well as on its battle mission and the principles and doctrines governing military operations in general.

Infantry Characteristics

The outstanding characteristics which distinguish the infantry from other combat arms are as follows:

(1) Human elements predominate. — Battle control difficult; high degree of training, discipline, leadership, and morale essential.

(2) Weapons light, portable, immediately available, and highly effective at close range. Fire power considerable, but entirely inadequate to combat a force of all arms.

(3) Foot troops of low mobility but high maneuverability—can operate over almost any type of terrain.

(4) Ability to utilize terrain to best advantage (use of cover) and advance in inconspicuous formations.

(5) Fire power and tactical mobility properly proportioned to facilitate employment of combined fire and movement.

(6) Ability to close with the enemy and overpower him by shock action (bayonet, grenades, tanks).

(7) Ability to hold ground gained for an indefinite period of time.

(8) Vulnerability high — heavy casualties usual. "Infantry bears the brunt of battle."

This list of infantry characteristics might be extended, but it is considered sufficient to indicate the powers and limitations of this combat arm, which materially affect its tactical employment.

Infantry Organization and Equipment

As a result of these changes, we will soon have a lighter, faster, and more powerful infantry than we ever have had before. Its reduced personnel, in all units except the squad, will permit greater maneuverability and control without dangerously decreasing its ability to sustain combat; its armament of semi-automatic rifles for all riflemen, of machine guns and mortars in both the company and battalion echelons, and of antitank guns in the battalion and regimental echelons, will provide every assault unit with more adequate firepower when and where required; its motorized trains, including cross-country weapons and ammunition carriers for each company, will facilitate supply, movement, and the continuity of close fire support; its light, homogeneous, and uniformly armed platoons, its improved means for overcoming local resistance, and its motorized carriers and trains, will all combine to increase our infantry's battlefield mobility and speed of attack. Although all of these changes have not yet been effected, our tactical instruction this year is based on the assumption that each infantry regiment and tank unit (peace or war) is now organized and equipped as authorized.

The new "streamlined" infantry division (peace strength) retains that regimental organization with no change except elimination of the band, but the number of infantry regiments in each regular army division has been reduced from four to three, and the brigade echelon and the divisional tank company have been eliminated.

Certain Considerations Affecting the Initiation and Conduct of an Attack

The following preliminary activities incident to every coordinated attack, affect directly the employment of the infantry:

a. Advance.—The advance to the battlefield should be so conducted that the infantry will arrive at the proper time and place physically fit to fight. Among other things, this implies the full use of available motor transportation for shuttling foot troops or carrying their equipment.

b. Reconnaissance and security.—Adequate provisions must be made by each commander to maintain active reconnaissance and insure the continuous security of his unit against hostile ground and air activities. Infantry battle reconnaissance must determine essential detailed information about the terrain and the enemy's strength, dispositions, movements, and capabilities.

c. Covering forces.—Advance guards, reinforced and supported as necessary, must drive-in the hostile covering forces, develop the enemy's position, locate his flanks, and secure a suitable line of departure for the infantry attack. In this task, infantry reinforcements should be held to the minimum.

d. Development. — Development, in conformity with the commander's plan of attack, should proceed as rapidly as prac-

ticable and finally dispose all infantry units in protected assembly positions behind their respective lines of departure.

e. Assembly positions. — Brigade or regimental assembly positions, affording cover from effective hostile artillery fire and air observation, if practicable, should be utilized to drop packs, issue extra ammunition, and rest the troops long enough to prevent their being delayed unnecessarily in the more exposed battalion assembly positions farther front.

f. Approach.—The advance from route column to final assembly positions should be made along covered routes, in extended approach formation, with suitable provisions for security, and it should proceed concurrently with command reconnaissance, planning, and issue of orders by battalion and higher commanders.

g. Time and space. — Staff computations of time and space should be based on the assault battalion having the longest approach, and should make due allowance for its marching time at the appropriate cross-country rate, plus a minimum of 30 minutes for issue of extra ammunition, if this has not been done, plus a minimum of 30 minutes more for reconnaissance, orders, and troop dispositions by company and platoon commanders, plus a reasonable margin of safety for unexpected delays.

h. Orders. — Orders must be clear, concise, and timely, so that all echelons of command, to include assault platoon leaders, can understand them readily and complete their final preparations for attack.

i. Frontages or zones.—Within the limits of effective control and adequate fire support, the frontage or zone of action assigned any infantry unit should be appropriate to its mission, the terrain, and the hostile situation.

INFANTRY BATTALION FRONTAGES (1)
(BASED ON 1939 ORGANIZATION)

Type of Attack (2)	*Maximum Width of Zone (Yards)*	
	Peace-strength	*War-strength*
Strong attack against an organized position	600	900
Strong attack against a hastily organized position or a deployed defense	700	1000
Holding or secondary attack	900	1200

(1) To be used as general guides only. Variations should normally be under, rather than over, the maximum limits indicated. Proportionate reductions should always be made for losses, reduced fire support, unfavorable terrain, etc.

(2) Attack frontages are based on an initial formation of two companies in assault for strong attacks and three abreast for secondary attacks — over favorable, average terrain; they pertain to the width of zones after their intersection with the hostile position. They are the maximum permissible for average terrain, with organic infantry — artillery fire support. If exceeded, the extension must be justified by the special situation.

In advance guard and other covering force action, these limiting figures pertain to the breadth of attack formations – not to the zones of action or responsibility.

Ordinarily, we are not concerned here with the frontage of subordinate units. However, if a battalion attacks an organized position in column of companies under a plan to "leap frog" the assault company when fresh impetus is needed rather than reinforce it on one flank, the maximum frontage for such a formation should be limited to 350 and 500 yards, respectively, for peace and war-strength units. Please note that these various frontages, under the conditions stated, are to be used as general guides only and must always be adjusted to the actual situation. However, with this battalion yardstick you can usually determine suitable frontages for an infantry regiment, brigade, or division, operating over favorable average terrain, after you have determined the number of battalions initially available for assault.

Zones of action are assigned areas of unit responsibility, extending forward in the direction of attack to include the unit's tactical objective. Like lines of departure, they are a means of control and coordination. However, zone boundaries should not prevent necessary maneuver in an adjacent zone, or the temporary occupation of firing positions therein, provided such action will result in no interference or confusion. Because of the difficulty and importance of maintaining the proper direction of attack, particularly in fog, smoke, or darkness, the compass bearing of the objective should always be given to small infantry units, and any zone boundaries assigned should be designated by reference to easily recognized terrain features.

j. Attack formations.—As regards suitable attack formations, each infantry unit should be disposed in width and depth appropriate to the requirements of its mission, the terrain, and the hostile situation, provided the front occupied is well within the limits of effective control and adequate fire support. In fact, it is not desirable that an infantry unit occupy the entire width of its zone of action in the initial formation required by its mission, as this would deny maneuver space on the flanks and possibly prevent the utilization of corridors or other available cover. Units assigned to decisive missions, such as making the main attack or the main effort of a secondary attack, are usually disposed in relatively great depth on narrow frontages in order to provide reserves for subsequent maneuver; conversely, units assigned to less important or more limited missions are usually deployed on extended frontages in slight depth. The greater the depth, the more narrow the front must be, and vice versa. The desirability of holding-out reserves and thereby retaining greater freedom of action must always be balanced with the need for rifles and bayonets on the front line. Hence, depending upon the situation, the component rifle units of any command may be disposed for attack in any of the following formations:

INFANTRY ATTACK FORMATIONS

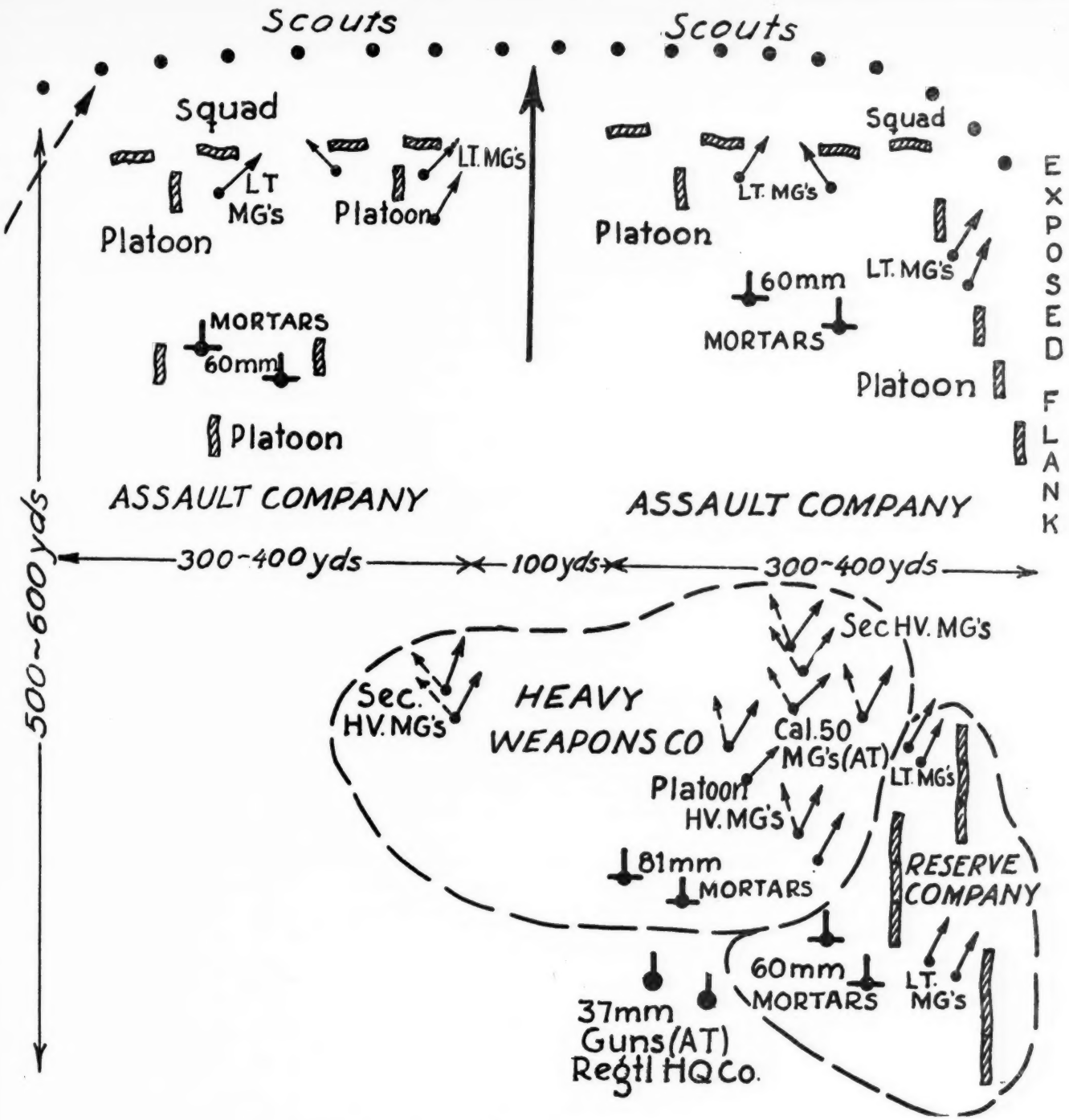
All units in column: — for a strong and deep advance; *or* for utilizing a covered route of approach; *or* when the hostile situation is vague.

One unit in assault and the remainder echeloned on one or both flanks: — for a wide zone of action when the hostile situation is vague; *or* for the flank protection of a larger unit; *or* for developing the action toward a flank.

Two units in assault and one in reserve: — when the zone of action cannot be covered by one unit (with troops and fire), and considerable fire power and shock action are needed initially.

All units abreast: — for a short advance on a wide front, when the enemy is fixed in position and maximum fire power is more essential than maneuverability.

Of these formations, the one most frequently used in attack is illustrated by this chart. Here we see an infantry battalion, with two rifle companies in assault and one in reserve, advancing in the attack as the right flank unit of a larger force. Note that each assault company and platoon, as well as the battalion,



(Chart No. 1)

initially has one of its component units in reserve; that most of these reserves and the bulk of the heavy weapons company are disposed to protect the exposed right flank; that the four light machine guns and two 60-mm mortars of each assault company are located close behind the assault platoons, and that the battalion heavy weapons, together with two 37-mm antitank guns from the Regimental Headquarters Company, are well within supporting distance from the front line. As indicated, the straight rigid alignments of parade formations are unsuited to the battlefield. Assault lines are naturally wavy or broken, and squad and platoon columns in rear echelons are staggered and irregular. Gaps between assault units provide desirable space for maneuver, but they must not exceed the limits of mutual support. Front line density must not be less than five yards per man, and should be approximately the same for both main and secondary efforts in order to deceive the enemy. The extended frontage occupied by secondary attack formations is obtained chiefly by reducing reserves to the minimum and reinforcing the firing line with additional units.

Scheme of Maneuver

The formation adopted for attack in any situation is, of course, based upon the commander's scheme of maneuver. For small infantry units, this scheme should be simple, and limited

to securing an immediate objective by enveloping maneuver or by the penetration of "soft spots" in the hostile defense. The latter method is particularly applicable to interior units having no access to hostile flanks until these are created by breakthrough tactics. But please remember that penetrations are hazardous, unless there are sufficient reserves immediately available to attack the flanks of the salient and exploit the success. When the hostile situation is obscure, as it usually is in battle, an interior unit may be forced to attack straight to its front until an opportunity is presented to employ a more favorable form of attack. Needless to say, the enveloping attack is the most favorable and favored maneuver, next to surprise attack by the whole force against the enemy's flank or rear. When straight frontal attacks cannot be avoided, the best tactical doctrine applicable is to "go where the going is good," and, "wherever the enemy gives, give him more." But whatever the type or form of attack employed, each unit should have a main effort of maximum driving power, directed against the enemy's weakest point, combined with one or more secondary efforts of sufficient strength to contain the bulk of the enemy and even attract his reserves away from the zone of main effort. Provision must also be made for a suitable reserve, and plans prepared for its probable employment. Furthermore, all supporting fires, not essential for secondary efforts and not reserved for general support, should always be concentrated in support of the unit's main effort.

Supporting Fires

General

Except in night operations, the infantry attacks by employing coordinated fire and movement. With fire, it inflicts casualties and endeavors to neutralize the enemy's combat power; by movement — or maneuver — it increases the effectiveness of its fire, occupies vital terrain features, and completes the enemy's destruction in hand-to-hand combat. In daylight attacks, fire and movement must supplement each other continuously to enable the infantry to close with the enemy. Necessary movement over exposed terrain must be closely supported by fire superior to that of the enemy by virtue of its volume, direction, or accuracy. This requisite fire superiority may be attained from unsupported infantry weapons only when the enemy is similarly restricted in means.

Auxiliary Arms

Against a force of all arms, infantry cannot make much progress, even with its tanks, unless strongly supported by artillery, aviation, and chemical fires. To insure success, these fires must be carefully coordinated with the infantry advance and constant liaison maintained. Infantry-artillery teamwork is vitally important. As the infantry is the moving element of this team, the artillery must insure its advance by close and effective support. Infantry mortars and tanks are primarily designed to supplement — rather than reinforce — artillery fires, which alone have the requisite range and power to disrupt a well-organized defense.

Infantry Weapons

However, since the available auxiliary fires are seldom sufficient to neutralize local resistance along the entire front, each rifle company and battalion has its own base of fire which closely supports its maneuvering elements. This base of fire consists mainly of organic machine-gun and mortar fires, reinforced, when practicable, by 37-mm gun fire and the supporting fires of reserves and non-maneuvering units. As indicated in "Tables of Organization" and "Reference Data," the attack allotment of two 60-mm mortars to each rifle company, two 81-mm mortars to each battalion, and an adequate number of motorized cross-country weapon and ammunition carriers to keep them supplied with ammunition, now provides these assault units with the means to combat hostile machine guns effectively and to destroy the enemy hiding in shell-holes, trenches, and similar areas defiladed from flat trajectory fire. Since machine guns are most effective against personnel when sited to deliver oblique or enfilade fire, both the four light machine guns of each rifle company and the attack quota of eight heavy machine guns of the battalion Heavy Weapons Company endeavor to secure such firing positions behind the more advanced elements in their own or adjacent zones. When this is not practicable, they fire through gaps in the line or support by overhead fire. However, since the mission of the heavy machine guns includes also the protection of the battalion against hostile air activities and flank counterattacks, and also supporting the maneuvers of the battalion reserve, these heavy weapons will usually support the advance of assault companies from more rearward positions than those occupied by the light machine guns. The battalion's two .50 caliber machine guns, and such regimental 37-mm guns as may be supporting the battalion, cover the most likely avenues of tank approach, and support the attack to an extent consistent with their primary mission of antitank defense. As the attack progresses, all of the infantry supporting weapons advance with their units by echelon in order to insure close and effective support at all times.

Another supporting infantry weapon that is frequently available for close support of the foot troops is the tank — a highly efficient, self-propelled vehicle of the track-laying type, combining fire power, mobility, armor protection, and shock action. It is essentially an offensive weapon, of particular value in the assault of a strongly organized defensive position. Its primary mission is to destroy hostile machine guns, which have not been neutralized by the supporting artillery, and otherwise to assist the advance of the infantry foot-troops. To accomplish this mission, the tanks are employed in mass, in two or more echelons, on ground favorable to their characteristics, and preferably in support of the principal effort. They should be committed to action only when strong resistance is encountered which must be overcome quickly to further the maneuver. As they cannot hold ground they have seized, they must be followed closely by the infantry foot-troops operating in their zone of action; as they are vulnerable to hostile antitank guns and artillery, they must be well-supported by artillery, aviation, and heavy weapons fires carefully coordinated with their rapidly changing movements. Difficult as is their operation under modern combat conditions, their assistance to the infantry is invaluable in the attack of a defensive position.

Conduct of the Attack

Advancing the Attack

Supported by these infantry weapons and all available artillery, the leading echelon of each assault battalion crosses the line of departure, at the time of attack prescribed in orders, and advances rapidly toward the initial objective. The exposed areas of the battalion zone are covered by fire and avoided by

the maneuvering elements whenever practicable. Available cover is utilized to the utmost to advance the attack with minimum loss. Every "doughboy" must understand terrain and the use of ground and cover, in order to survive under modern warfare conditions; each infantry commander must know the "lay of the ground" or be laid in it with most of his men. Even if he knows a better use of ground and cover, he'll still find it plenty difficult to progress through the enemy's well-planned cordon of defensive fires.

Available terrain corridors leading toward the hostile position are utilized to protect attacking units against oblique machine-gun fire from beyond their flanks, but care must be exercised to avoid walking into a trap saturated with persistent gas and enfiladed by hostile weapons of every caliber. To minimize this danger and insure the protection of the flanks against hostile observation and fire, it is usually advantageous to advance along the flanks of the corridor and avoid the center.

When forced, by lack of screened or covered approaches, to advance over open, fire-swept areas, infantry units dash across, in open and widely deployed formation, or progress by the infiltration of individuals and small groups to a designated line under cover where control can be regained. Supported by all available fires, the advance is then continued by rapid bounds to successive terrain features affording cover, observation, and a base for further fire and movement.

When the advance progresses to within 600 yards of the enemy, rifle fire is added to the fire of supporting units, and the advance is continued by the "shouldering process." In this process, fire and movement are alternated in such manner that a rifle unit, whose advance is made possible by the combined fire of adjacent and supporting units, moves forward to an advanced position and by its fire assists the advance of the units on its flanks and rear. Fire effect is greatly increased by flanking or enveloping action resulting in convergent fires. Enfilade fire effect is also obtained by the lateral echelonment of supporting machine guns in adjacent zones of action. But whatever the means employed, the attacking force must gain and maintain such fire superiority that its infantry can approach and pass through the enemy's final protective line of obstacles and fire, without excessive casualties, or else the attack will fail.

The Assault

If the leading elements of any battalion are enabled to arrive within 200 yards of the hostile main line of resistance, its supporting fires are transferred to the flanks and interior of the enemy's position, and the infantry assault is launched. Protected only by these lifted fires and the desultory assault fire provided by the semi-automatics and grenades of the leading echelon, the assaulting units break through the partially disrupted wire, close quickly with the enemy, and engage in hand-to-hand combat, with bayonet, pistol, and grenade, until they can pass over the front line trenches and advance farther into the position.

Consolidation of Captured Areas

Hostile machine guns which have not been destroyed by tanks or supporting fires must be outflanked and captured by infantry patrols. However, too much delay is hazardous. Until the last line of resistance has been broken, infantry should not halt on any captured locality more than the minimum time necessary to reorganize shattered units hastily and consolidate the area as a base for further advance. Otherwise the enemy will be given an opportunity to collect his forces and stiffen his resistance. Also, at this stage, particular attention must be paid to protecting the flanks against counterattacks. If these cannot be broken up by air attack and the supporting fires of the artillery and infantry heavy weapons, they must be blocked by the assault units and attacked in flank by reserves.

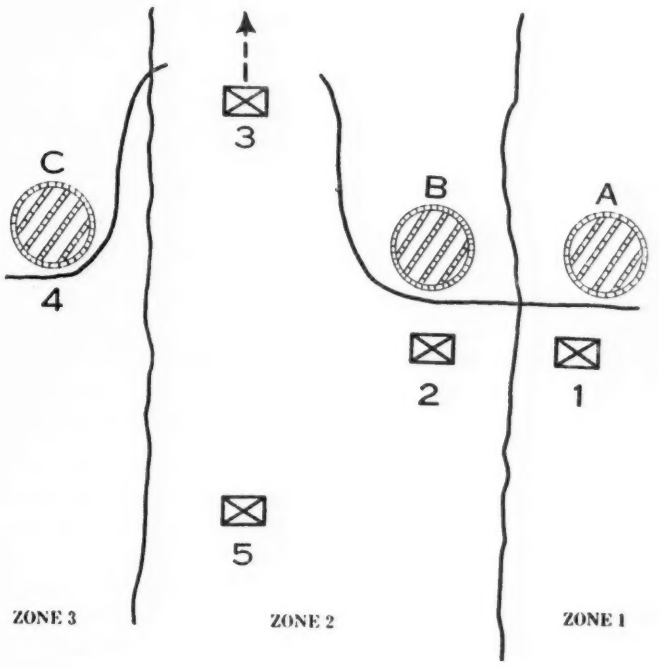
Employment of Infantry Reserves in Attack

(1) To assist the advance and cover the flanks of assaulting units with fire.
(2) To assist by fire the progress of adjacent units which fall behind.
(3) To repel counterattacks, especially on the flanks.
(4) To maneuver against the flanks of resistance holding up assault battalions.
(5) To fill gaps between assault battalions.
(6) To relieve assault battalions and take over their role.
(7) To deliver the final blow of the attack.
(8) To exploit success or avert disaster.

The strength, position, and alertness of any reserve must be such that it can execute any of its probable missions successfully whenever required. The reserves of flank units are usually echeloned toward the exposed flank, in readiness to repulse counterattacks by flanking action or to extend an envelopment, as the situation demands. Whenever the reserve is committed to action, a new one should be constituted without delay from assault units "pinched out" or relieved.

Continuing the Attack

The capture and consolidation of one or two strong points usually marks the beginning rather than the end of the fight to eject the enemy from his position. It is then that the infantry



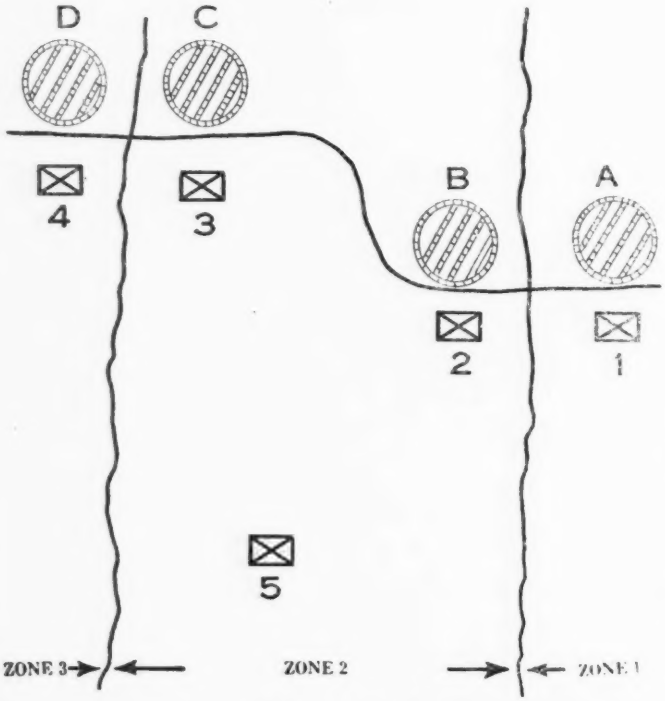
(Chart No. 2)

really becomes involved in combat on every side, under the terrific handicaps of diminishing supplies, disrupted communications, erratic fire support, casualties, confusion, and counter-attacks. In spite of such difficulties, each unit must endeavor to forge ahead, even though adjacent units are "pinned to the ground" and unable to advance. According to infantry doctrine, the best way to assist a neighboring unit that is held up is to continue the advance to the maximum limit of effective support. Resistance on the flanks, which does not disappear under threats to its rear, must be overcome by the flanking fire or maneuver of local reserves following in trace of the advancing unit.

The unit we have been discussing is represented by Unit 3 on Chart No. 2. Units 1, 2, and 4 are held up respectively by resistance at A, B, and C. Unit 5 is in reserve.

QUESTION: How should Unit 5 be employed?

ANSWER: It should be moved forward in rear of Unit 3, prepared to attack either B or C from the flanks.



(Chart No. 3)

Consider Chart No. 3. Units 1, 2, 3, and 4 are respectively unable to advance against hostile resistance at A, B, C, and D. Unit 5 is in reserve. Supporting fire is uniformly distributed to assist Units 1, 2, 3, and 4.

QUESTION: How should Unit 5 be employed?

ANSWER: To envelop B's right flank.

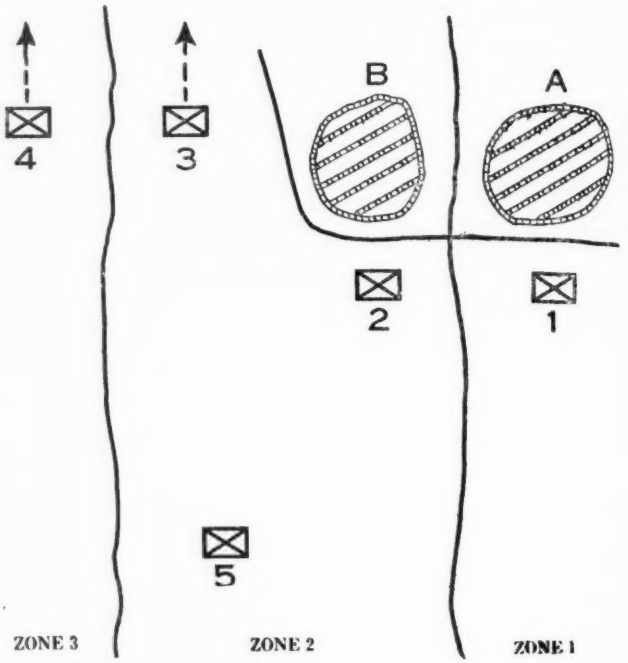
Note: In this case, a penetration might be made between B and C, but it would be unnecessarily dangerous as the additional reserves needed to attack the flanks and widen the gap are not shown as available. A penetration should not be attempted when the situation favors an envelopment. In this example, Unit 2 constitutes the secondary or holding attack force and Unit 5 the enveloping or main attack force.

QUESTION: What changes should be made in fire support?

ANSWER: All available fire should be shifted to support of Unit 5.

QUESTION: If successful, what will be the result of this action?

ANSWER: Resistance at B should be forced back at least abreast of C, thereby assisting the advance in Zone 2 and possibly the advance in Zone 1 by the threat to A's rear.



(Chart No. 4)

Consider Chart No. 4. Units 3 and 4 are advancing. Units 1 and 2 are stopped by resistance at A and B. Unit 5 is in reserve. The bulk of fire support is being delivered to assist Units 1 and 2.

QUESTION: How should the reserve by employed?

ANSWER: Move it forward in rear of Unit 3 prepared to attack B from the flank, supported by all available fire, or should conditions warrant, to force the enemy out by a threat to his rear.

Consider Chart No. 5. Units 1, 2, and 3 are held up by resistance, respectively at A, B, and C. Unit 4 is advancing, and Unit 5 is in reserve.

QUESTION: How should Unit 5 be employed?

ANSWER: Attack B's right flank.

QUESTION: Is there a more decisive employment?

ANSWER: Move into Zone 3 and attack C's right flank, thereby possibly causing A and B, as well as C, to fall back.

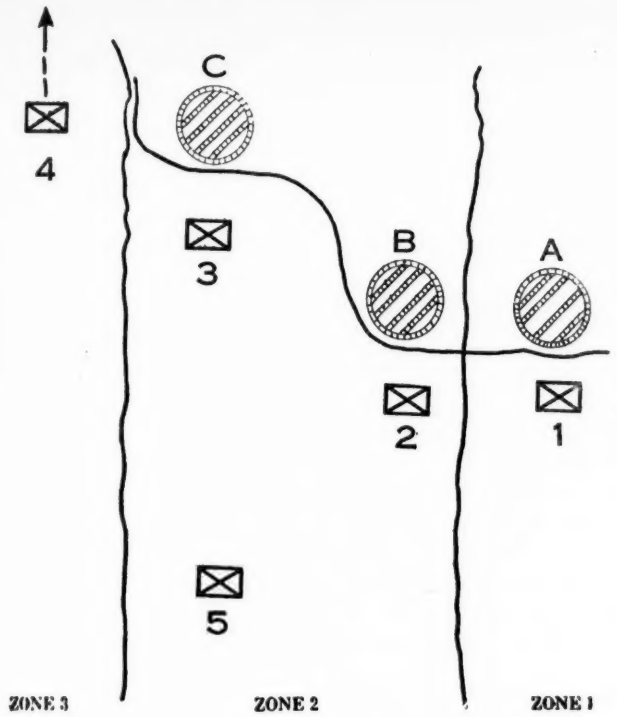
QUESTION: After committing Unit 5 against C's right flank, how would you reconstitute a unit reserve?

ANSWER: Upon capture of C, Unit 5 to replace Unit 3 as the left assault unit, relieving the latter for reserve.

In this manner, infantry units along the whole front endeavor to reduce successive strong points and "shoulder" their way through the hostile position to the final objective.

Action Following Success or Failure

When that important area is captured, the infantry pursues the retreating enemy with fire, throws out covering forces to the front and flanks, consolidates the position against counter-



(Chart No. 5)

attack, and quickly reorganizes its units in readiness to continue the attack, pursue, or hold its ground, as required by the situation and mission.

Infantry must hold all ground gained. If the attack of any unit, at any stage, is unsuccessful, it assumes the defensive, until reorganization, prearranged fires, or the employment of reserves enable it to continue the attack. If an advance is still impossible, the unit "digs-in" and endeavors to maintain its defense until reinforcements can arrive or a withdrawal can be effected under cover of darkness. To retreat under fire in daylight may or may not be disgraceful, but it is almost sure to be disastrous.

Modifications of General Offensive Tactics for Special Situations

So far, this discussion of infantry tactics in offensive combat has been general in nature, though based on the procedure employed in penetrating a well organized defensive position. However, with slight modifications to fit special requirements, the general doctrines enunciated apply to any type or form of attack.

Penetrations

In the penetration of a *position defense*, the necessity of crossing a fire-swept zone, driving a salient through the front of the position, and reducing the successive strong points therein, requires definite fire superiority from the very beginning and a deep narrow formation of the main attack force, with adequate reserves behind each assault unit for maneuver, flank protection, relief, and exploitation.

These same requirements are even more necessary in the penetration of a *zone defense*, because of the greater difficulty and importance of maintaining the continuity of attack. When such a zone, with flanks secure, is fortified with steel and concrete, *a stabilized situation* results. In that case, the infantry has a closer but much more hazardous approach to the assault and must depend almost entirely on heavy artillery and aerial bombardment to breach the fortifications, neutralize hostile fires, and cover the advance on front and flanks. Only limited objectives are practicable, unless the attacking force has a marked preponderance in aviation, artillery, tanks, and reserves. Attempts to solve this problem in the last World War resulted in the development of chemical agents, flame throwers, tanks, mechanization, aviation, antiaircraft, and even infantry parachute troops. What other means of assisting the infantry may be developed in the present European war should be of interest to all military students.

Envelopments — Main Attack Force

As compared with penetrations, envelopments present much fewer difficulties for the infantry in the main attack force. Although there is more marching and maneuvering in the approach, greater difficulties in communication and supply, and less time available for reconnaissance and other preparation, there is little or no resistance initially, much easier access to the objective, and greater opportunities for maneuver and a rapid advance. The wider the envelopment practicable, the less the resistance probable. When encountered, resistance usually consists of a deployed defense combined with counterattacks against the explosed flank. Hence the formation of the main enveloping force should be narrow and deep, with reserves echeloned on the outer flank in readiness to extend the envelopment or strike counterattacks in flank. Extension of the envelopment, however, to match continued extension of the defense must be limited, in order to avoid a decrease in the depth and driving power necessary to reach the objective.

Holding or Secondary Attacks

Infantry units participating in holding or secondary attacks are usually confronted with strong, organized resistance, yet handicapped by wide frontages, few reserves, and weak or intermittent fire support. Although given a limited objective for these reasons, the mission of holding the enemy in position and attracting his reserves necessitates an energetic attack by every assault unit. When the needs of the main effort of the secondary attack for reserves and fire support sap the power of the other units to advance, they must at least harass the enemy with patrols and small-arms fire and be prepared to hold their ground against hostile counterattacks.

Advance-guard Action

In advance-guard action, the component infantry units also operate in wide zones with no immediate reserves, but the whole force in rear is prepared to reinforce them with troops and artillery and the initial resistance is usually weak and overextended. The initial mission of protecting the march of the main body against hostile interference, necessitates a formation in depth with patrols to the front and flanks. The patrols find and fix the enemy, and the reserve maneuvers to attack or defend or delay, as required by its mission. In seizing desired terrain features and driving back hostile covering forces, an advance-guard unit either contains or disregards hostile detachments in the less important areas of its wide zone, and concentrates its force sufficiently to drive through to its objective. While this has certain earmarks of a penetration, the envelop-

ment nevertheless is the attack maneuver most frequently employed in advance-guard action. Developing the hostile position amounts to a reconnaissance in force, on a wide front, to determine the flanks, strong points, and gaps, by drawing hostile fire. Holding essential terrain features and covering the development of the main body necessitate temporary assumption of the defensive. Yet, on the whole, advance-guard action is characterized by initiative, speed, and aggressiveness, from start to finish.

Fighting in Woods

Since infantry can hardly attack over average terrain without doing some fighting in woods, this discussion would be incomplete without mention of the following characteristics pertaining to that type of combat.

(1) Woods, like villages, should not be attacked unless possession is indispensable.
(2) Envelopment tactics employed whenever practicable, large woods usually necessitate penetration.
(3) Several coordinated simultaneous attacks better than single main effort.
(4) Advance to near edge of woods disadvantageous to attacker — should be made under cover of smoke and supporting fires, or at night.
(5) Prompt seizure and occupation of near edge of woods of paramount importance.
(6) Movement of troops in woods concealed from ground and air observation.
(7) Direction, control, and communication difficult to maintain.
(8) Possibility of surprise and ambush greater than in open — avoid roads, trails, and clearings.
(9) Effectiveness of gas concentrations increased.
(10) Effectiveness of fire greatly decreased.
(11) Necessity for close combat increased.
(12) Action by small forces favored — assault echelon in squad columns, closely followed by reserves in platoon column or files, off trails — Indian style fighting most appropriate.

Night Attacks

Although a night attack is one of the most difficult and hazardous operations resorted to in war, its effectiveness has been repeatedly demonstrated in the past, and its use will probably be even more frequent in the future. Right now the Germans are said to be using this type of attack extensively on the Western Front. Careful consideration should therefore be given to the following characteristics of this special and almost exclusively infantry operation.

(1) Night should be propitious — not pitch dark — no wind toward enemy.
(2) Terrain should be favorable — no woods — routes of approach clearly defined.
(3) Objective must be limited and easily recognized in dark.
(4) Troops should be fresh, well-trained, and under good control at start.
(5) Preparations must be detailed, including: reconnaissance by subordinate leaders; provisions for secrecy, identifications, control and coordination, maintenance of direction, action in case of victory or defeat, rallying points, etc.; explicit instructions to troops.
(6) Units should be formed facing objective and as close to it as possible.
(7) Formation must facilitate maintenance of direction and control — column formation initially, then line of squad columns preceded by patrols; strong reliable leaders at head and rear of each column.
(8) Reserves should be posted on flank, to exploit success or cover withdrawal.
(9) Assault echelon should be armed with rifle and bayonet only — no ammunition or grenades.
(10) Secrecy and simplicity are essential.
(11) Maneuver of any kind is impracticable. Each attacking column drives through to objective, regardless of adjacent units or hostile flares and barrage.
(12) Success depends upon aggressiveness, direction, control, and surprise.

Miscellaneous

In spite of the modifications necessitated by each situation, the infantry attack doctrines summarized below have general application to almost all types and forms of attack.

EXTRACTS FROM INFANTRY ATTACK DOCTRINES

The importance of its mission and the nature of its attack necessitate that the infantry, in particular, scrupulously observes all the Principles of War.

To surprise the enemy, the infantry must move rapidly and make the best possible use of ground and cover.

Throughout the operation, infantry commanders of all grades are responsible for continuous reconnaissance and for the security of their units against hostile ground and air activity.

The approach march should bring infantry toops into their advanced assembly positions, at the proper time, in good physical condition and high morale, i.e., "fit to fight."

Infantry's combat power rests primarily on the morale and fighting ability of the individual soldier and the leadership of its subordinate commanders. To attack under modern warfare conditions, the infantry must be physically fit, well-organized and equipped, thoroughly trained, skillfully led, and imbued with courage, initiative, and the will to win or die.

In daylight attacks, infantry fights by employing coordinated fire and movement to seize and hold its objectives. With fire, it inflicts casualties and endeavors to neutralize the enemy's combat power; by movement, it increases the effectiveness of its fire, occupies vital terrain features, and completes the enemy's destruction in hand-to-hand combat.

In night attacks, no fire is employed, maneuver is limited to a straight frontal attack of a close well-defined objective, and special precautions are taken to insure secrecy, direction, and control.

During daylight, in addition to its heavy weapons and tanks, the infantry must have strong, close, and continuous support by the artillery, aviation, and other auxiliary arms, in order to advance against a hostile force of all arms and exercise its defensive power. Infantry-artillery teamwork of the highest order is essential to success. All supporting fires must be carefully coordinated with the advance of the assaulting echelon.

Before crossing the line of departure, assault platoons should be familiar with the situation in their front and with the orders for attack. Orders must be clear and concise and arrive

in time to be of use. In the absence of definite instructions, small infantry units must be guided by their mission, the terrain, and the hostile situation.

The scheme of maneuver for small infantry units should be simple, and limited to assuring an immediate objective by enveloping maneuver or by the penetration of "soft spots" in the hostile defense.

The main effort of each unit should be given the maximum striking power and be directed against the enemy's weakest point.

All infantry units are disposed for attack in width and depth appropriate to the requirements of their missions, the terrain, and the hostile situation, provided the front occupied is well within the limits of effective control and adequate fire support. Units assigned to decisive missions are disposed in relatively great depth on narrow frontages, in order to provide reserves for subsequent maneuver. Conversely, units assigned to less important or more limited missions are deployed on extended frontages in slight depth.

Within the limits of effective control and adequate fire support, the frontage of any infantry unit is determined by the mission, the terrain, and the hostile situation. Ordinarily, the frontage (zone) of a battalion in a secondary attack should never exceed 900 yards for a peace-strength unit or 1200 yards for a war-strength unit (1939 organization). Extension beyond these limits renders effective control and adequate fire support impracticable in an attack.

Unoccupied portions of a zone of action must be limited to areas that can be adequately covered by fire of the unit concerned and its supporting weapons, without adversely affecting the mission assigned.

The difficulties of maintaining direction and control in forward areas of the combat zone must be considered by all commanders. Lines of departure, zone boundaries, and objectives must be designated by reference to easily recognized terrain features; in addition, the magnetic compass direction of attack must be known by all infantry officers and noncommissioned officers. Provisions must be made to insure as rapid and uninterrupted communication as practicable; all infantry headquarters must be mobile and in close proximity with the assault echelon.

Every infantryman must understand terrain and the use of ground and cover, in order to survive an attack under modern warfare conditions. The best way to avoid losses is to avoid being seen.

In an advance, use should be made of terrain corridors leading to or through the hostile position, provided their flanks are secured against hostile observation and fire. Usually, it is advantageous to advance along the sides of the corridor and avoid the center.

Exposed areas in the zone of advance should be covered by fire and avoided by maneuvering elements whenever practicable.

Movement over exposed terrain must be closely supported by fire superior to that of the enemy by virtue of its accuracy, direction, or volume.

Fire effect is greatly increased by flanking or enveloping action resulting in convergent fires. Enfilade fire effect is also secured by the lateral echelonment of supporting infantry machine guns in adjacent zones of action.

Zone boundaries do not prevent necessary maneuver in an adjacent zone, or the temporary occupation of firing positions therein, provided such action will result in no interference or confusion.

Under effective long-range hostile fire, infantry units advance by bounds to successive terrain features which provide cover, observation, and a base for further fire and movement. Supporting weapons and reserves protect the flanks against counterattack.

Company light machine guns follow advancing rifle platoons, in their own or adjacent zones, and support the advance of rearward units with oblique or enfilade fire; if this is impracticable, they fire through gaps in the line. Other supporting weapons advance by echelon so as to provide close continuous support. The speed of displacement must be as rapid as circumstances permit.

Supporting weapons affect the outcome of battle by firepower alone. Weapons which have not fired have not attacked — no matter how many times they have been placed in position. Suitable provisions must be made for the timely replenishment of ammunition, particularly for the supporting infantry weapons.

During the entire advance, fire and movement are so coordinated that the "shouldering forward" by separate units is assisted by the combined fire of supporting units and of neighboring assault units which are not advancing simultaneously.

When the assaulting elements arrive within about 200 yards of the hostile main line of resistance, all supporting fires are transferred to the flanks and interior of the enemy's position and the infantry assault is launched.

Available tanks assist in the close approach and the assault, by crushing obstacles and destroying hostile machine guns which interfere with the advance of the rifle units.

Tanks are employed in mass, in two or more echelons, on ground favorable to their characteristics, and preferably in support of the main effort. They should be committed to action only when strong resistance is encountered which must be overcome quickly to further the maneuver. As they cannot hold ground, they must be followed closely by infantry foot-troops; as they are vulnerable to hostile antitank guns and artillery, they must be well-supported by artillery, aviation, and heavy weapons fires carefully coordinated with their rapidly changing movements.

Hostile machine guns which have not been neutralized by tanks or the fire of infantry mortars, artillery, or aviation, must be outflanked by infantry patrols.

Until the last line of hostile resistance has been broken, infantry should not halt on any captured locality more than the minimum time necessary to reorganize shattered units hastily and consolidate the area as a base for further advance.

Infantry must hold all ground gained. If the attack of any unit is unsuccessful, it "digs in" and assumes the defensive until prearranged supporting fires or the employment of reserves enable it to continue the advance. Counterattacks are repulsed by fire and the flanking action of reserves.

The strength, position, and alertness of any reserve must be such that it can execute any of its missions successfully whenever the situation requires.

The reserves of flank units are usually echeloned toward the exposed flank in readiness to repulse counterattacks by flanking action or to extend an envelopment, as the situation demands.

Whenever the reserve is committed to action, a new one should be constituted without delay.

In advancing through the enemy's position, the most effective way for an assault unit to assist a neighboring unit is to continue its own advance to the maximum limit of effective support. Resistance on the flanks, which does not disappear under threats to its rear, must be overcome by the fire or maneuver of local reserves.

The enveloping attack is the favorite infantry maneuver, and is always employed whenever practicable.

The penetration of "soft spots" is a maneuver frequently employed successfully by interior infantry units when no hostile flanks are accessible.

Penetrations are hazardous unless there are sufficient reserves immediately available to attack the flanks of the salient and exploit the success.

No infantry unit should be thrown directly against resistance that has proved too strong for another similar unit.

When a situation is vague, an interior unit may be forced to attack straight to its front until an opportunity is presented to employ a more favorable form of attack.

Regardless of the form of attack, every infantry unit should have a main effort of maximum driving power supported by all available fires.

When a secondary attack force is too weak to advance, it must attack chiefly by fire and the activity of strong patrols, and be constantly prepared to defend itself against counterattack.

To fix the enemy in position and attract reserves away from the main effort, the density of the assault echelon of a secondary attack force, and the effort it makes to advance, must deceive the enemy as to the real nature of its attack.

When an infantry unit has advanced through the depth of a hostile position and captured the last center of resistance, it pursues the enemy with fire, throws out covering forces to the front and flanks, consolidates the position, and reorganizes without delay, in readiness to continue the attack, pursue, or hold its ground, as required by the situation and mission.

Within reasonable limits, good infantry can always take another step and fire another shot.

Across The Line of Departure
Conduct of The Attack

Historical Illustration

25 April 1918

By Captain H. N. Hartness, *Infantry*

The planning, preparations and formation for the attack have been completed. Our interest now lies in the conduct of the attack once our assault echelons cross the line of departure. It is during this phase of the offensive operation, the commander having made his decision and loosed his subordinate elements, that the comment by Clausewitz: "The activity of a military leader is continuous strife with the unexpected " is forcefully exemplified.

We can not isolate this phase of combat, the conduct of the attack after the line of departure is crossed, from the planning and preparation phase. They are closely interrelated. Excellent planning and preparation with poor execution or conduct will probably give but mediocre results, perhaps even failure. Similarly, poor planning and preparation of the whole with excellent execution by lower commanders may result in weakness and lack of unified effort by the whole.

Obviously, we are interested in the conduct of the lower units, those which have the blood-letting front line work to do. It is they who must make or break our efforts, but in this discussion our primary interest centers in the conduct of the attack by the larger units of combined arms.

To the question, what has the corps or division commander with which he personally can influence the conduct of the attack, once the attack is under way? We find this answer:

(1) His artillery;

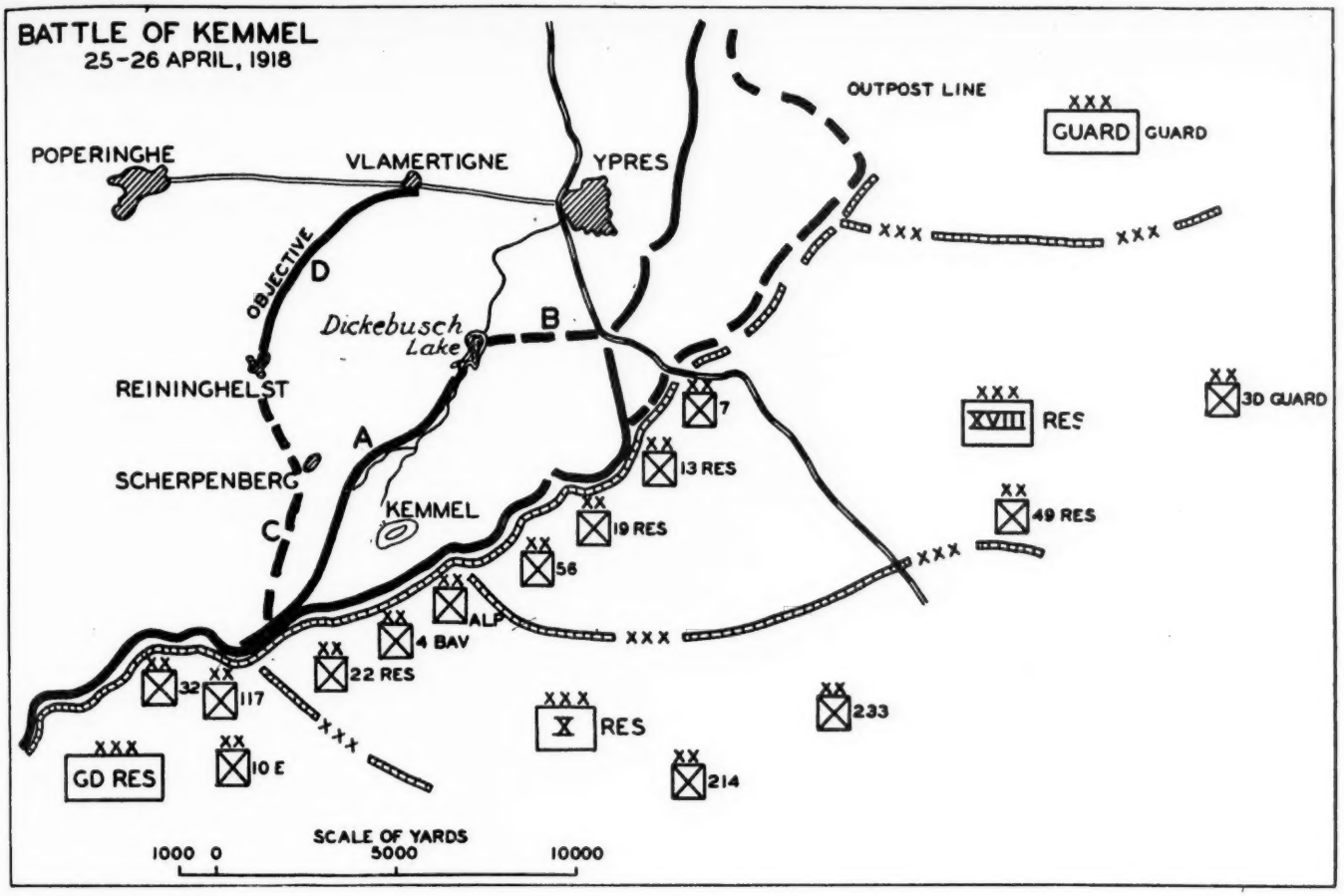
(2) His reserves;

(3) Attached or reinforcing elements such as tanks, combat aviation, cavalry;

(4) His personal influence as exerted by his own energy on his subordinates.

The Objective and Its Relation to the Conduct of the Attack. — In battle, the attacker seeks to destroy or defeat the hostile force confronting him. That is his real objective. But ordinarily we assign a decisive terrain feature, a fixed area, on which to direct our attack forces, initially. The choice of the objective is influenced primarily by these factors: (1) the location and distribution of the enemy *at the time* the decision is made and the orders are issued; (2) the capture of this objective (in space) either defeats or destroys the hostile force in position or places our own troops favorably to continue the offensive action. But, remembering that, at best, we can only deduce the capabilities of the enemy and that the will and reaction of the hostile commander will begin to reveal themselves fully only after our attack is launched, it is the conduct of our own attack, the retention of objectives initially assigned or a change in objectives that our attack will gain its maximum results. It is in the conduct of the attack that we often read the story of missed opportunities, missed because: (1) the preparation and planning may have been faulty; (2) the objective assigned initially became a fixed obsession and an ossification of the mind took place; (3) reserves were improperly located and employed; (4) adequate reserves were lacking; (5) cooperation and coordination broke down, (6) the leadership failed.

The Conduct of the Attack in the Penetration.— The attack by penetration seeks to break through and envelop; we may even say that the penetration is a preliminary phase to the decisive effort, to be made by envelopment against and in rear of the penetrated flanks. How shall we conduct this attack; how locate and employ our reserves; how provide for continuous



Map No. 1

artillery support, or its equivalent, to the infantry? Let us consider briefly the attack on Mount Kemmel 25 April, 1918.

This battle has been called "a neglected opportunity" by the German participants.

On Map No. 1 is shown the general trace of the two opposing lines at daybreak 25 April, with, however, only the German forces indicated. The plan provided for a penetration by the German XVIII and X Reserve Corps to capture the line A–B, first day's objective (Map No. 1), the XVIII Corps with part of its force to establish a defensive flank along B, the X Reserve Corps to push on, capture line C and establish a defensive flank along that line. As thus protected the second line divisions: 3d Guard, 233d, 214th and 10th Ersatz, were to push through for exploration past the east end of Mount Kemmel towards the road: Poperinghe—Vlamertigne to cut off the Ypres salient. The objective of these second line divisions was the line: Vlamertigne—Brandhock ridge — Reninghelst (line D), a penetration followed by an envelopment.

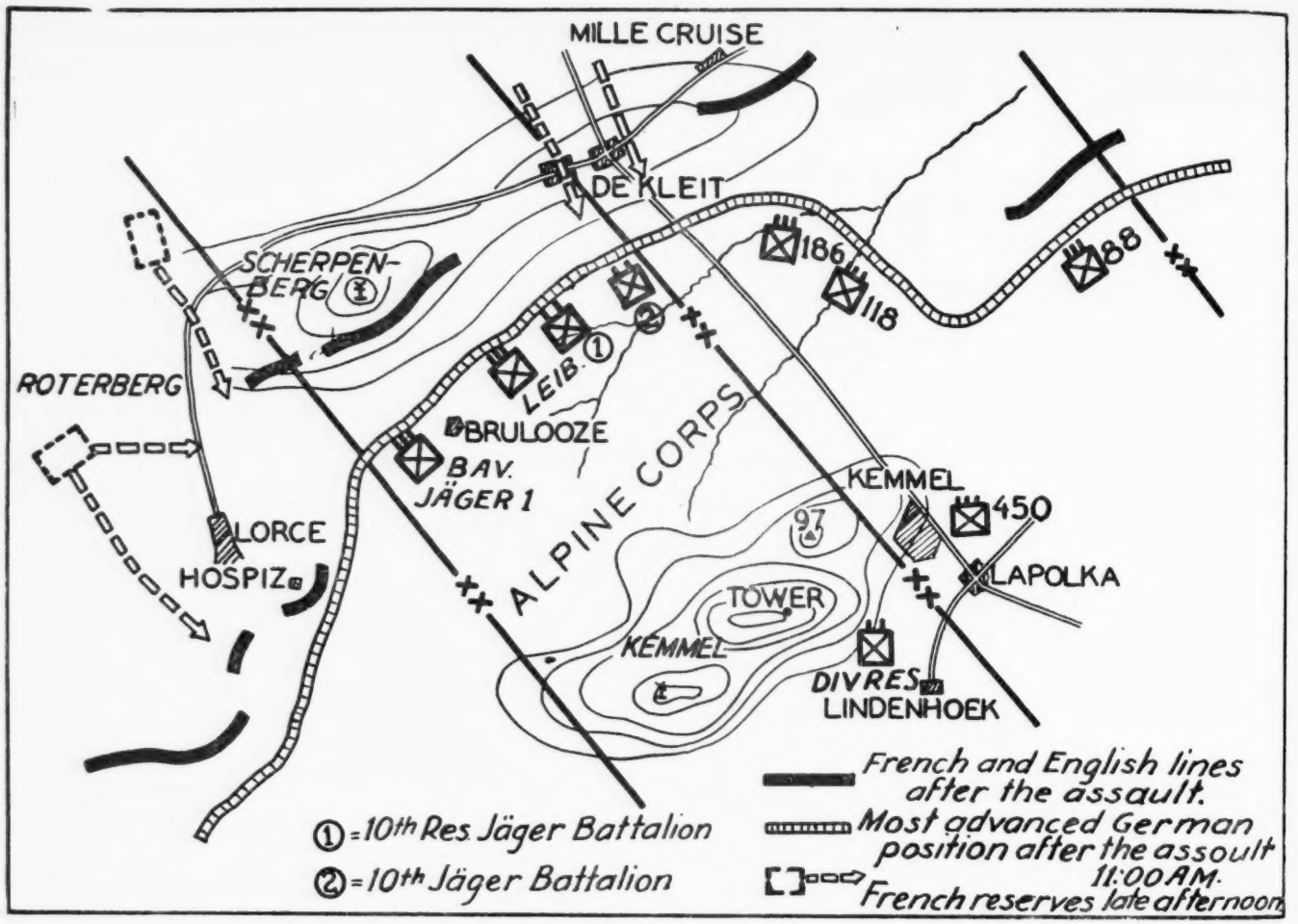
Mount Kemmel was the key position in Flanders, and so great was its influence on the minds of the German commanders that their whole attention was focused on it, their thinking seemed to run about like this: "Let us take Kemmel; after that the future will take care of itself." The general tone of conversation at the various German headquarters was of a very limited objective attack.

So much for the army point of view. Let us glance at the Alpine Corps, in reality a division of three regiments, trained for mountain warfare, and although this unit was not absolutely fresh, it constituted about the best troops participating in the attack. Its initial mission was the capture of Mount Kemmel. It formed the spearhead of the main attack, assisted by the 56th Division on the right, the 4th Bavarian on the left.

At 6:00 AM 25 April the attack jumped off behind a powerful artillery barrage, carefully timed and fixed. In the Alpine Corps we find the three regiments (less one battalion) in the front line; in the 56th Division we find two regiments in the front line and two regiments (this division had an additional regiment attached) in reserve.

Would not a different allotment of the regiments engaged have produced better results? As the attack was actually launched, the Alpine Corps had no effective exploiting force left in the hands of the commander. Would it not have been preferable to attach an additional regiment to the Alpine Corps rather than to the 56th Division? Or would it not have been preferable for the Alpine Corps to have attacked with two regiments in line, one in reserve? But we must remember the very limited initial objective and that the year was 1918.

The violent artillery bombardment just prior to the attack found the French massed on Mount Kemmel with no depth to the defense. The German attack hit as an avalanche; the defense crumpled like a house of cards. By 7:10 AM the Leib Regiment of the Alpine Corps was on the summit of Mount Kemmel; by 7:40 it was firmly established there and had taken 800 prisoners. At the same time Kemmel village and 1600 prisoners fell to elements of the 56th Division. As the British Official History



Map No. 2

states, "The finest observation station on the Flanders front had been lost in little more than an hour."

By 11:00 AM the German attack reached the line shown on Map No. 2. The Alpine Corps had reached its limited objective, a rapid advance with little opposition. On its right, the left of the 56th Division had kept up with the Alpine Corps but its right was stopped by the British on Hill 44. The 4th Bavarian Division had advanced and formed a defensive flank east and south of Locre. (Note that this attack was launched at the junction of the French and British forces.)

The attack advanced no farther; to the astonishment of the few French on Scherpenberg and near Mill Kruise both the 10th Jäger battalion and the 10th Jäger reserve battalion were withdrawn behind the Kemmelbach, while in their immediate front there was *no* enemy. In fact, a resumption of the attack was not made until several days later; then it was stopped; the Ypres salient was not reduced.

Wherein lay the answer to the failure of the German forces to exploit their great initial success?

This attack had for its ultimate objective the reduction of the Ypres salient, in which the capture of Kemmel was but the first step. Why then in its orders did not the Fourth Army assign the road: Poperinghe — Vlamertinghe as the objective of the XVIII and X Reserve Corps, rather than the very limited first day's assigned objective: Dickebusch Lake — Kemmelbach? Such an objective would have been in harmony with the conceived operation. The objective and the mission should be compatible. To begin an engagement based on a conception of doubtful execution is not conducive to the maximum results.

But what about the conduct of the attack itself. As previously noted, once the attack is launched the means left the higher commander (division, for example) with which to influence his attack and bring it to a successful conclusion are: (1) his reserves; (2) his artillery; (3) attached or reinforcing supporting arms; (4) his personal influence as exerted on his subordinate commanders.

We find that the Fourth Army, learning of the initial great success, shortly after 9:00 AM issued orders for the X Reserve Corps to exploit the success, but only after the initial objective had been consolidated and adequate artillery and ammunition had been displaced forward. Furthermore, it warned strongly about the probability of French counterattacks. It is interesting to note that these orders reached the front-line elements some six hours after they were issued, between 3:00 and 3:30 PM but no attempt was made to advance. We ask why and run into these answers: (1) the direct artillery support for the front-line units were lacking, telephone communications had been and were cut, the fixed barrage was still fixed — new fire missions had not been given. If communications go out and stay out in situations of this kind, should we not preferably attach artillery to the lower units and thereby provide the necessary support? (2) between the Alpine Corps and the 56th

Division a gap existed, contact had been lost. The right regiment of the Alpine Corps reported that an attack was impossible with its exposed right flank and with the probability of hostile counterattack. It did not advance. But here rises the question, "How during combat are flanks protected and counterattacks against the flank met?" Protection is obtained by the contact with adjacent units or by our own reserves; counterattacks are repulsed by reserves. However, the Alpine Corps had no worthwhile reserve. It had used all but one battalion in the initial attack. When the time for exploitation came, there was lacking that depth of organization necessary to drive through; and (3) the Fourth Army had not advanced the second line divisions so as to be more favorably disposed to exploit, either by passing through or reinforcing the front lines.

Let us inquire for a moment into the action of the 56th Infantry Division (Map No. 2) which had attacked with two regiments in assault, two in reserve. On its right the assault echelon hit Hill 44 and there it stopped; on the left Kemmel was captured and the advance to the initial objective continued. But at Kemmel (village) the leading regiment and the reserve regiment had become intermingled. Confusion resulted; the 450th Infantry lost its identity as a reserve. The reserve regiment had followed too closely; it became involved willy-nilly. Consequently, both of the spearhead divisions (Alpine Corps and 56th Infantry Division) found themselves without effective reserves when these were needed to: (1) close a gap; (2) guard against counterattacks; (3) in the 56th Division to be maneuvered against Hill 44 from the southeast and by envelopment reduce the resistance confronting the right of the division; (4) to exploit the success. Many examples may be cited of such failure during the years 1914-1918.

With proper reserves, advancing by bounds, to protect flanks, to meet counterattacks, to envelop hostile resistance from the flank, both of these divisions would have been most favorably situated to exploit the initial success, by mutual assistance and cooperation. Which leads us to the question — How far should one unit advance beyond immediate contact with its adjacent units? Should one advance headlong, irrespective of the adjacent units? The size and depth of reserves will partly determine our answer, because it is these which provide our own flank and rear protection; mutual supporting distances give us another clue. We can not provide a fixed rule for the determination of this distance. It is such that your command will not be cut off and badly handled by the hostile forces before adjacent or rear elements can support you. This distance will vary with the size of the force since it is in direct ratio to the battle life of the unit concerned.

Not only at Kemmel do we find orders from higher headquarters slow in reaching the troops executing the attack. Difficulties of signal communications are common in peace-time maneuvers, more so in war. We must make every effort to speed up order transmission in battle, thereby speeding up execution. Liaison officers are at least a partial answer. As regimental, brigade, division and higher commanders your orders can not be executed until they are received. Continuously during battle, at your headquarters, there should be liaison officers from the next higher and the next lower headquarters and *you* should provide liaison officers at these higher and lower headquarters. At least these can keep in close touch with the situation and can, by motorcycle or motor car, transmit fairly rapidly the orders for execution. Might not the effective use of liaison officers at Kemmel materially expedite the transmission of orders. Furthermore, it is not sufficient that the commander issue orders, he must remain abreast of the situation, and be prepared to meet the ever recurring changes; he must be forward; his means of command must be forward; in the transmission of instructions and orders, distance often plays a large role. Personal contact between senior and subordinate often irons out difficulties most quickly. The personal equation is often decisive.

At Kemmel lack of direct artillery support for front-line elements was at least partially responsible for the failure of the attack to be continued during the afternoon. In the future we must also face the probability that as the attack progresses the necessity for artillery displacement will lessen the supporting fires; in fact, it may fail us at times. Whether we must wait on the line reached until reorganization of the artillery-infantry cooperation is achieved will depend on the hostile reaction, upon whether we have tanks, combat aviation or smoke which will bridge a temporary or semipermanent lack of artillery support, and upon the leadership. An energetic, aggressive leadership will employ his means most expeditiously and advantageously to drive forward an attack which is well under way.

THE CONDUCT OF THE ATTACK IN THE ENVELOPMENT. — Because of the decisive results it promises, the enveloping attack is the form chosen whenever practicable. But it must be borne in mind that he who envelops is subject to envelopment and not only in the planning and preparation phase of battle must consideration be given to probable hostile reaction but especially during the attack itself all commanders must maintain a strict watch on both their own decisive efforts and upon a frustration of hostile counter efforts. The successful general must have an all embracing eye and energetic resolution. These characteristics in commanders have won more battles than have perfect plans which initially promised success but whose very perfection caused neglect in meeting the situation as it developed.

We may plan to envelop the enemy, we may plan to use our reserves to *continue* an envelopment but the hostile commander must be reckoned with during the attack. Developments may require great changes in our plans. A planned envelopment may produce the final decisive effort against an over-extended hostile center. It may develop that a hard final push through the center with our reserves will most effectively assist our enveloping action and gain the decision.

The successful conduct of the attack implies and demands mutual cooperation between adjacent elements and by supporting elements. Although we speak of the conduct of the attack, our general attack may often resolve itself into several types of action, strong offensive in one area, defensive in another, delaying action in still another, all coordinated, however, to gain the major decision. Careful planning and preparation are essential to the successful execution of the attack. In the planning and preparation phase we try to determine the line of action which will promise us the greatest success. We think through our operation, but in its execution many deterring factors, many upsetting incidents will occur. As commanders we must be alive to these unforeseen or unexpected developments, we must be prepared to meet them and drive through to success, unless these developments indicate overwhelmingly that there exists practically no chance of success for our planned operation. It is in the conduct of the attack that the spirit of the troops and the will of the commander are most thoroughly tested; it is in the conduct of the attack that these powerful human qualities reach their greatest heights. But the will of the commander

can only be executed when it is transmitted and the will can only be effectively directed when the commander has a complete understanding of the situation. Therefore, coordination and cooperation, continuous information and rapid transmission of instructions must be the rule during the attack. Without these we shall lose time and time on the battlefield is probably our most important material element. I refer again to Kemmel.

Map Problem No. 3

9 December, 1938

	Paragraphs
SECTION I. — Situation and First Requirement	1–3
II. — Second Special Situation	4–6
III. — A Solution of Second Requirement	7
IV. — Discussion	8–15
V. — Comments on Solutions	16

SECTION I

Situation and First Requirement

	Paragraph
General situation	1
Special situation (Blue)	2
First requirement	3

1. GENERAL SITUATION. — *a. Maps.* — Strategic Map, Gettysburg-Richmond, 1 inch = 4 miles, Gettysburg sheet; Special Map A-B, herewith; Special Map C to be issued with Section III.

b. Opposing forces. — The Pennsylvania-Maryland State Line is the boundary between Blue (north) and Red (south). War was declared on 8 December.

2. SPECIAL SITUATION (BLUE). — *a. The I Corps.* — The Blue I Corps is concentrating in the area: Gettysburg — Hanover — York preparatory to an early advance into Red territory with a view to capturing Baltimore. The 1st Division, Major General A commanding, is operating in advance of the remainder of the corps.

b. Mission of the 1st Division.—The mission of the 1st Division, reinforced, is to cover the advance of the I Corps along the Baltimore-Hanover Road and to seize the high ground at Reisterstown (388-705) by dark, 11 December.

c. Events prior to 11:30 AM, 9 December. — (1) On 8 December the 1st Brigade, reinforced by the division artillery, advanced into Red territory and occupied Dug Hill Ridge northwest of Manchester (383-729). During the night, 8-9 December, the 2d Brigade and other elements of the division advanced under cover of darkness and went into concealed bivouacs in the areas shown on Special Map A-B.

(2) A Red force marched from the south during the night, 8-9 December, established contact with advance elements of the 1st Division and commenced organizing a defensive position in the vicinity of Hampstead (386-722). The strength of this Red force is estimated as a reinforced brigade.

(3) The 1st Division advanced shortly after daybreak, 9 December, to drive in the Red covering forces, employing the 1st Brigade with certain attached elements and the division artillery.

d. Situation at 11:30 AM, 9 December. — (1) *Enemy.* — Enemy intrenchments and artillery positions in the Hampstead area as known to Major General A at 11:30 AM, 9 December, are as shown on Special Map A-B, Red cavalry, with advanced elements along the line shown, is in contact with the 901st Cavalry Squadron. Except for small scattered detachments, no other Red forces are known to be north of the Potomac River.

(2) *Own forces.* — (a) The 1st Division, reinforced, is disposed at 11:30 AM, 9 December, as shown on Special Map A. The 1st Brigade with five battalions engaged has been stopped along the line indicated. Division artillery is supporting the 1st Brigade from positions in the areas shown. The 2d Field Artillery is reinforcing the fires of the 1st Field Artillery. The 901st Cavalry Squadron is reconnoitering the flanks of the enemy position. It is opposed by weaker Red cavalry.

(b) The 901st Observation Squadron (Separate), operating from an airdrome at Harrisburg (Strategic Map) with advanced landing field at Hanover, is reconnoitering the general area: Littlestown (363-739) — Ellicott City (391-681) (Strategic Map) —Towson (409-697) — Maryland Line (404-736). Corps aviation is reconnoitering south of the international boundary, exclusive of the 901st Observation Squadron's air area, to Chesapeake Bay between the Potomac and Susquehanna Rivers (Strategic Map).

(c) Division engineers are performing their normal functions, including road maintenance in rear of the 1st Division.

e. Miscellaneous.—All streams shown on Special Map A are fordable except North Branch Patapsco River south of its junction with Beaver Run (382.5-705.5), Patapsco River, and Gunpowder Falls south of Blue Mount (407-722). Weather is clear and cold. Roads are hard and dry.

3. FIRST REQUIREMENT.—The decision of Major General A at 11:30 AM, 9 December.

SECTION II

Second Special Situation

	Paragraph
A solution of first requirement	4
Special situation, continued	5
Second requirement	6

4. A SOLUTION OF FIRST REQUIREMENT.—At 11:30 AM, 9 December, Major General A decides to attack early 10 December, enveloping the enemy right (east) flank from the vicinity of road junction 688 (397-722) and capture the high ground in the vicinity of Arcadia (387-717).

5. SPECIAL SITUATION, CONTINUED. — During the afternoon 9 December, in compliance with fragmentary orders from the division command post, preparation was made for the attack. The cavalry units on both flanks were ordered, at 12:15 PM, to prevent hostile ground reconnaissance in rear of its patrols until 6:15 AM, 10 December. A division field order, issued prior to 5:40 PM, 9 December, confirmed earlier fragmentary orders and directed *all movements* in preparation for the attack. At dark (5:40 PM), 9 December, the situation of the opposing forces remained in general as shown on Special Map A-B, The written

field order for the attack, with intelligence and signal communication annexes, was completed by 7:00 PM, 9 December.

6. SECOND REQUIREMENT. — Prepare paragraphs 2, 3, and 5 of the complete written field order issued at 7:00 PM for the *attack*, exclusive of annexes.

NOTES

1. Instructions as to movements to assembly positions will be omitted as these were issued in prior orders.

2. Special Map will be prepared and turned in as the operation map to accompany the field order.

SECTION III

A Solution of Second Requirement

Paragraph
A solution of second requirement 7

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7. A SOLUTION OF SECOND REQUIREMENT.—The required portion of the complete written field order is as follows:

2. 1st Div attacks early 10 Dec enveloping enemy right (east) flank from vicinity RJ 688 (397-722) to capture the high ground in vicinity of ARCADIA (387-717). Opn Map.

3. *a.* 1st Brig:
Atchd:
1st FA
1 bn 3d FA
½ Tr A 901st Cav Sq (effective 6:15 AM, 10 Dec)
1 co 901st Cml Regt
1 co 1st A Mecz Bn
1 MG Plat 104th CA (AA)
continue attack; principal effort on west flank at 6:15 AM, 10 Dec. Opn Map.

b. 2d Brig [less 3d Bn 4th Inf (3 *f*)]:
Atchd:
2 cos 901st Cml Regt
attack between 6:45 AM and 7:15 AM 10 Dec. Opn Map.

c. 1st FA Brig [less 1st FA and 1 bn 3d FA (3 *a*)]:
2d FA; direct support of 2d Brig
3d FA (less 1 bn): general support from positions generally in rear of 2d Brig.
All artillery prepare to mass fires on the high ground along the BLACKROCK ROAD [southeast of HAMPSTEAD (386-722)] between RJ 760 (390-720) and RJ 716 (392-718).

d. 901st Cav Sq [less ½ Tr A (3 *a*)]: Report any movement of Red reinforcements north from BALTIMORE. Assist attack of 2d Brig on div order. Maintain liaison with 2d Brig. Opn Map.

e. Air service:
(1) 901st Obsn Sq (Sep): two airplanes available for arty missions from 6:15 AM; one airplane on alert on airdrome for inf missions at 7:15 AM; one airplane on alert on landing field for command missions at 6:15 AM.
(2) 901st Bln Sq: Be prepared to furnish observation for arty and general surveillance for the div on div order. Opn Map.

f. Div res: (3d Bn 4th Inf)
Atchd:
1 co 901st Cml Regt
be prepared for prompt movement by motor or marching. Opn Map.

g. 1st Engrs: assemble on 3 hours' notice at SHAMBURG (397-725) and MANCHESTER (383-729).

h. 1st Bn 901st Cml Regt [less 4 companies (3 *a*) (3 *b*) (3 *f*)]: Opn Map.

i. 910th Inf (L of C): Protect installations and trains at HANOVER (370-745) and delivery of supplies to the div.

j. Prov Bn 104th CA (AA) [less 1 MG plat (3 *a*)]:
Provide gun defense for the enveloping force and the div res; MG defense for the div res, 2d Brig res, and div CP.

k. 1st A Mecz Bn [less 1 co (3 *a*)]:
Protect left (east) flank against mechanized attack from initial positions between YEOHO (398-717) and HEREFORD (403-720). Advance by bounds on div order.

x. Persistent gas on div order only.

* * * * * * *

5. *a.* Annex 3, Sig Com. (omitted)
b. CPs: Opn Map; 2d Brig report time of opening.

SECTION IV

Discussion

Paragraph
Purpose 8
Decision 9
The holding attack 10
Main attack 11
Division reserve 12
Other arms 13
Paragraph 5 14
Technique of order 15

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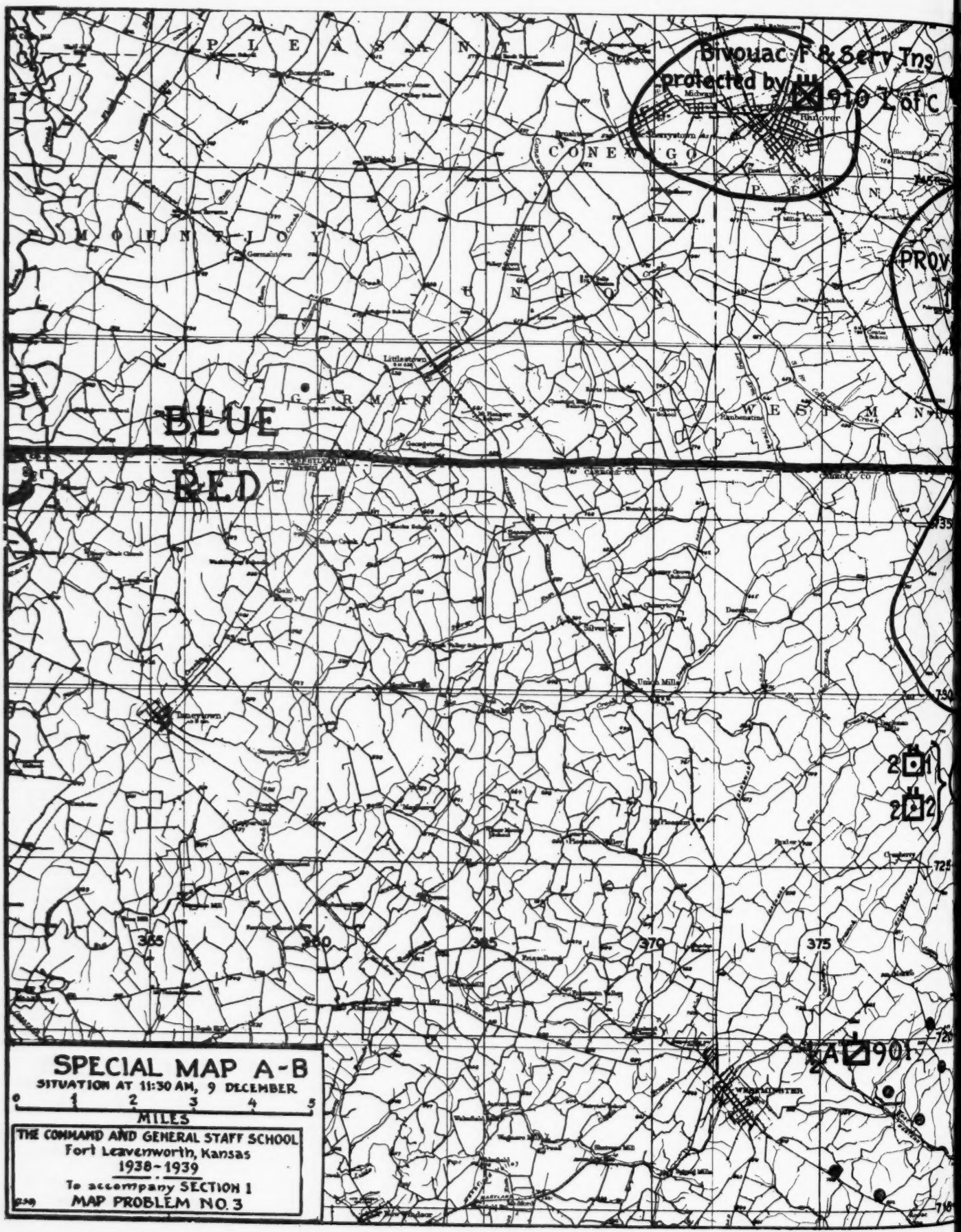
8. PURPOSE.—The purpose of this problem is to illustrate the considerations leading to a decision to attack by a wide envelopment, the disposition of units of the reinforced division for this form of attack, and the preparation of orders.

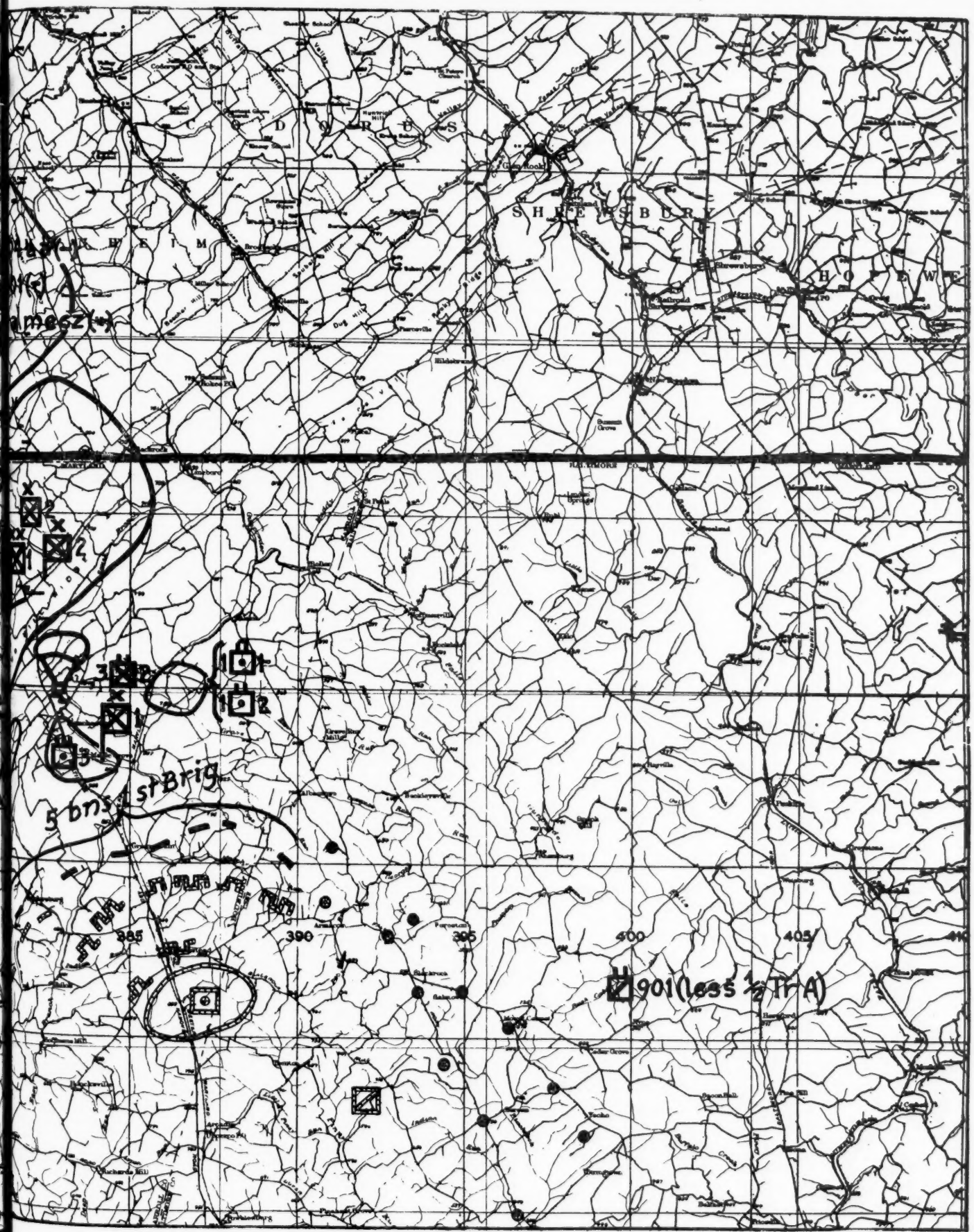
9. DECISION. — *a. Completeness.* — In this situation the enemy strength is known. The opposing force occupies an organized defensive position and is engaged in action with a portion of the 1st Division. Our information of the terrain, from actual observation and from an accurate map, is ample. A complete decision including the elements, what, when, where and how is warranted.

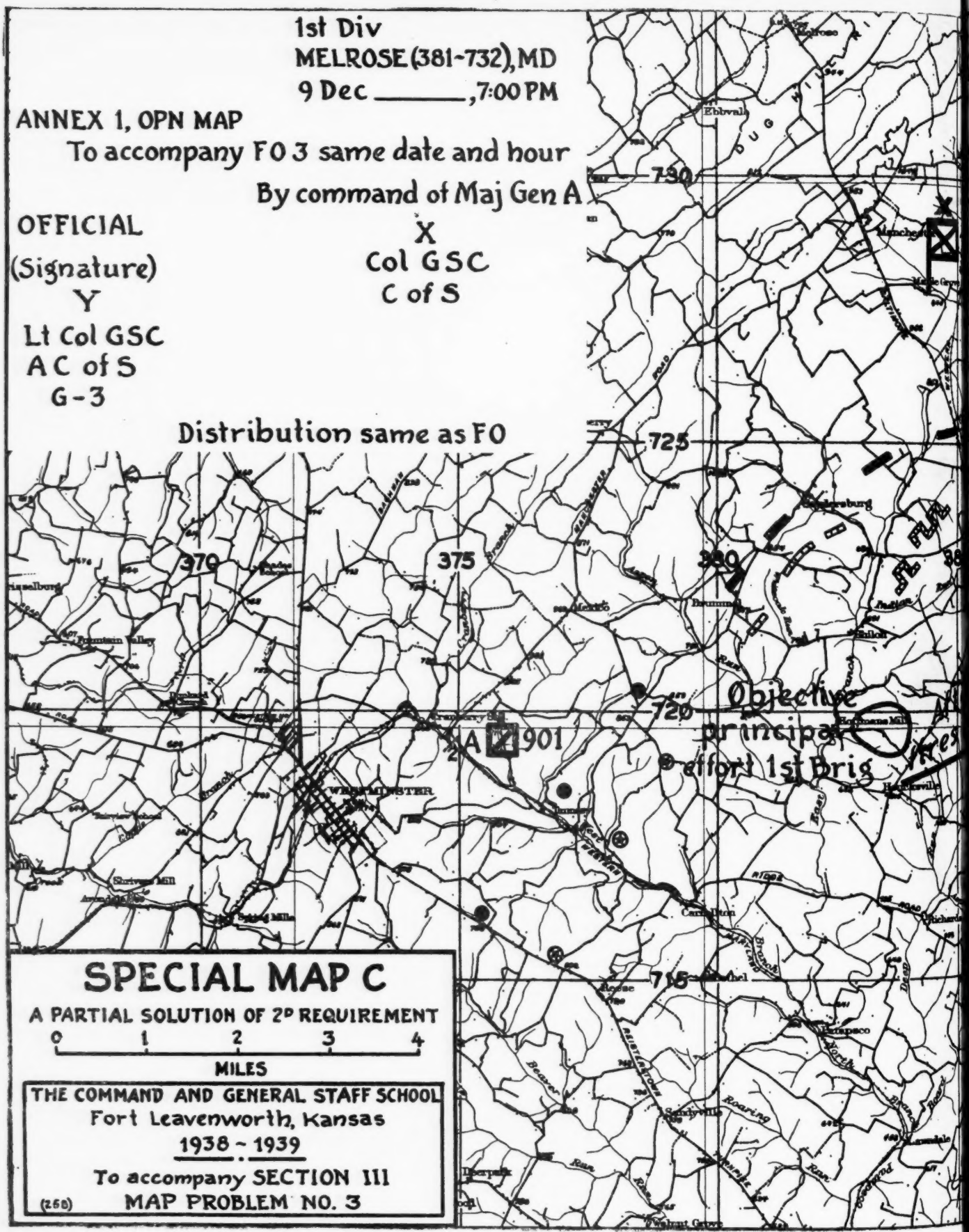
b. What.—The mission of the 1st Division requires an attack to clear the enemy from the area between the 1st Division and Reisterstown. This mission can best be accomplished if the 1st Division inflicts a decisive defeat upon the enemy. Tactical dispositions are favorable for attack by the 1st Division, notwithstanding the fact that the Red force is occupying a well chosen defensive position. The terrain does not preclude the possibility of a successful attack. Therefore a decision to attack should be made.

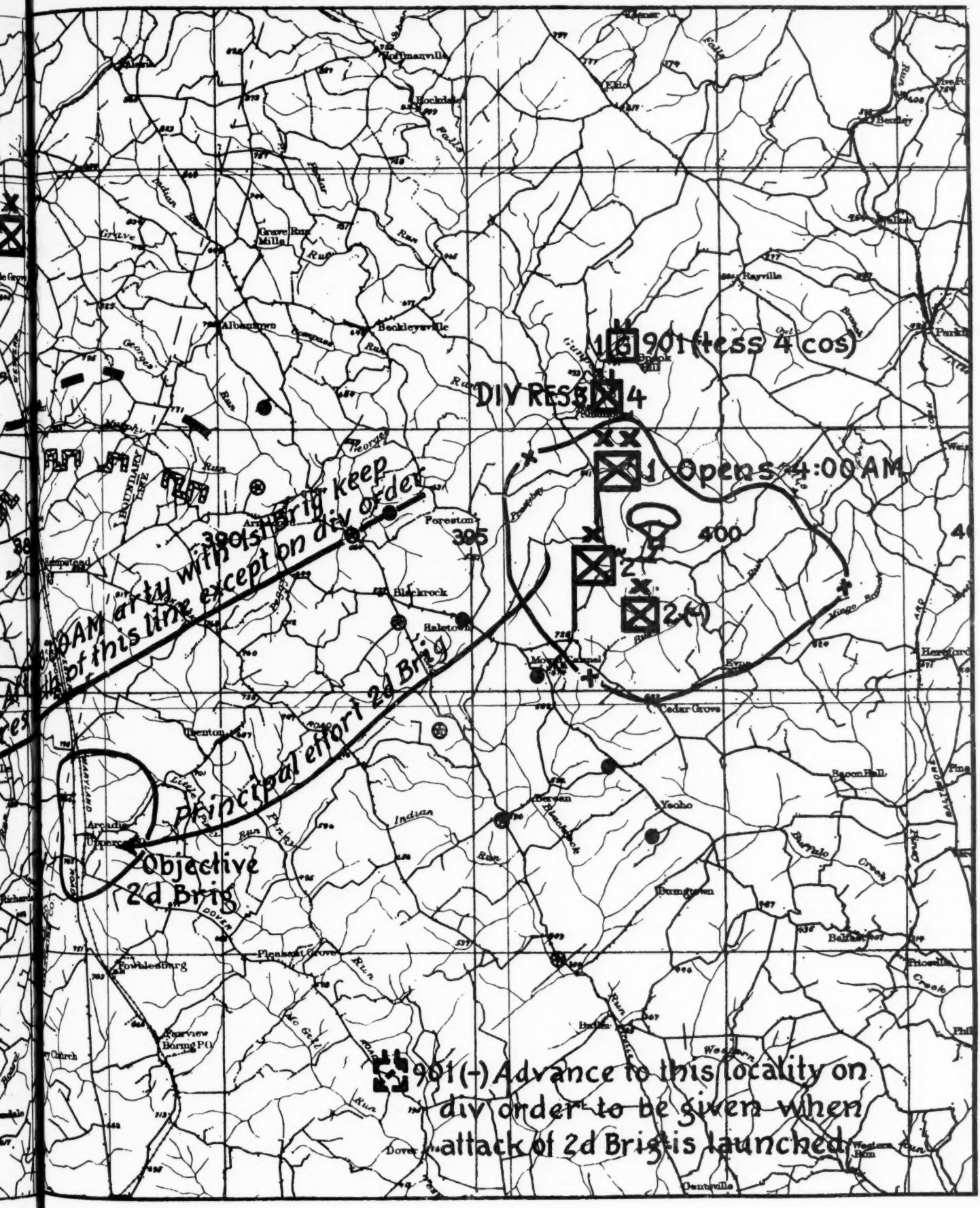
c. How. — None of the conditions which favor or necessitate a frontal attack exists. The width of the Red position is limited and its flanks are accessible. The attack should be an envelopment.

d. When. — No enveloping attack by the 1st Division can be launched prior to 3:30 PM, 9 December. There is little time between 3:30 PM and dark (5:40 PM) for achieving decisive results. Any enveloping attack today must strike close to the


Bivouac F & Serv Tns
protected by
910 Loft C
PLEASANT
CONEWAGO
MOUNTJOY
HUNTON
GERMANY
WEST MANN
BLUE
RED
PROV
Littlestown
Hanover
Union Mills
Taneytown
365
360
365
370
375
2A 901
SPECIAL MAP A-B
SITUATION AT 11:30 AM, 9 DECEMBER
0 1 2 3 4 5
MILES
THE COMMAND AND GENERAL STAFF SCHOOL
Fort Leavenworth, Kansas
1938-1939
To accompany SECTION I
MAP PROBLEM NO. 3


5 bns 1st Brig
901(less ½ Tr A)


1st Div
MELROSE (381-732), MD
9 Dec _____, 7:00 PM
ANNEX 1, OPN MAP
To accompany FO 3 same date and hour
By command of Maj Gen A
X
Col GSC
C of S
OFFICIAL
(Signature)
Y
Lt Col GSC
AC of S
G-3
Distribution same as FO
730
725
720
715
370
375
380
Objective
principal
effort 1st Brig
A 901
WESTMINSTER
SPECIAL MAP C
A PARTIAL SOLUTION OF 2D REQUIREMENT
0 1 2 3 4
MILES
THE COMMAND AND GENERAL STAFF SCHOOL
Fort Leavenworth, Kansas
1938 - 1939
To accompany SECTION III
(268) MAP PROBLEM NO. 3


1 901 (less 4 cos)
DIV RES
4
1 Opens 4:00 AM
400
385
2
2 (-)
Forestom
Blackrock
Ralston
Cedar Grove
Bacon Hall
Vecho
Burngreen
Pleasant Grove
Fowblesburg
Fairview Boring PO
Arcadia
Upperco
Glenton
Beaverdam Blackrock
Indian
Little Pinky Run
Mc Gill Run
Dover
Deanville
Western Run
Buffalo Creek
Mingo Road
Maryland Route 30
Double
Boundary Lane
Georges
Principal effort 2d Brig
Objective 2d Brig
901 (-) Advance to this locality on div order to be given when attack of 2d Brig is launched

Red organized position where, by a slight extension of either flank, Red can occupy terrain which is favorable for his defense. Of utmost importance is the improbability of achieving surprise in an attack today due to the necessity of moving troops into position in daylight. The mission of the 1st Division does not require attack today. It can be accomplished by a successful attack on 10 December. An attack should be made early on 10 December when the main attack can strike where the enemy is not prepared to resist.

e. Where. — (1) *Objective.* — Selection of the objective is a step in determining where to attack. Seizure of the Baltimore-Hanover Road in rear of the enemy position will interrupt or disorganize enemy supply. This road traverses commanding terrain which is vital to the enemy defense. The objective for the attack should be high ground along the Baltimore-Hanover Road. An objective too near the enemy organized position might cause the main attack to strike where the enemy is prepared to resist. An objective too distant from the enemy front line would make cooperation between the main and holding attack forces difficult and expose the interior flank of the main attack to counterattack. Any area along the high ground between railroad crossing 839 (387-721) and Fowblesburg (388-714) is a satisfactory objective.

(2) *Assembly areas.*—The main attack should be launched from an area already in possession of the 1st Division because an operation to secure any other area would require employing elements of the 2d Brigade, thus disclosing the presence of that brigade to the enemy. Therefore, an envelopment should be made only from assembly positions north of road junction 783 (375-716) on the west, or from assembly positions north of Yeoho (398-717) on the east.

(3) *Close envelopment, west flank.* — On the west flank, the valley of Aspen Run forms a possible route of approach for an advance from the vicinity of Mexico (377-722) towards the enemy rear. The high ground south and east of Hoffmans Mill (382-719), which is readily accessible to the enemy, commands this corridor and nullifies any advantage it may offer.

(4) *Wide envelopment, west flank.*—The 2d Brigade can reach assembly positions south of Mexico by a comparatively short march traversing a good road net. Terrain corridors for a favorable direction of attack are lacking in this locality. The ridge east of East Branch and North Branch Patapsco River blocks all approaches towards the objective and affords the enemy excellent observation and fields of fire. Therefore, terrain favors the enemy if the attack is made against his west flank.

(5) *Close envelopment, east flank.*—The corridor formed by the valleys of Georges Run and Peggys Run is a possible route of approach for a main attack from the vicinity of Beckleysville (393-727). However, the high ground one mile south of Armacost (391-723) commands this corridor. Red can occupy this high ground by a slight extension of his east flank. It is probable, also, that enemy artillery, utilizing observation and communications which are already established, is prepared to fire in this corridor. In order to strike Red where he is not prepared to resist and to avoid enemy observation, the main attack should pass to the south of the ridge along the line: road junction 511 (397-724) — Blackrock (393-722)—road junction 760 (390-720).

(6) *Wide envelopment, east flank.* — (a) The terrain between the ridge just mentioned and the ridge extending along the line: road junction 688 (397-722) — crossroads 726 (397-721) — road junction five hundred yards southeast of road junction 716 (392-718) is relatively more favorable for the main attack. Numerous minor irregularities and folds in the ground provide cover for maneuver and restrict the defender's observation and fields of fire. The area surrounding road junction 688 is a suitable assembly area for a main attack force. It is eleven miles from the south edge of the bivouac area of the 2d Brigade and seventeen miles from the most distant part of that bivouac area. If the rear battalions in the bivouac area are employed in division and brigade reserve, the 2d Brigade can occupy this assembly area without excessive marching and the troops can have a few hours rest before daylight.

(b) The terrain south of the ridge extending to the southwest from the vicinity of road junction 688 is advantageous for an attack from an assembly area near Evna (400-721). However, the increased distance from the bivouac area of the 2d Brigade to this locality is a disadvantage because it adds one hour to the marching time for the 2d Brigade.

(c) An attack from an assembly area in the vicinity of Bacon Hall (402-718) or any locality to the south of that place adds to the distance which the main attack force must march in preparation for the attack, and offers no compensating advantage.

10. THE HOLDING ATTACK. — *a.* The task of the 1st Brigade in this situation is to engage the largest possible portion of the enemy's strength in order to reduce to a minimum opposition to the main attack. It might have been directed to prepare a night attack to determine whether or not the enemy is withdrawing. The principal effort of the 1st Brigade should be made at such time and place as will attract enemy reserves away from the main attack. A principal effort at or shortly before daylight, 10 December, on the west flank of the Red position to capture the high ground east of Hoffman Mill may cause the enemy to believe that his west flank is being enveloped. As stated in paragraph 9 *e* (3) the terrain on the enemy west flank is not favorable for attack but no other locality offers greater advantages for the principal effort of the holding attack. Demonstrations during the afternoon, 9 December, against the enemy front line southwest of Snydersburg (382-724) would further deception. The 1st Brigade, if it is to engage the enemy frontally and make a principal effort on the west flank, needs at least five and not more than six battalions and as many auxiliary combat units as can be spared. Auxiliary supporting units attached to the brigade give the brigade commander the means necessary for accomplishing his mission. Reinforcements attached to the 1st Brigade should approximate the following:

(1) *The 1st Field Artillery.*—This unit is accustomed to operating with the 1st Brigade and already has its observation and communications established on the brigade front.

(2) *One battalion of the 3d Field Artillery.* — Some medium artillery support is required to counter artillery action against the principal effort. If more than two battalions are employed from positions generally in rear of the 1st Brigade, the main attack is deprived of needed medium artillery support.

(3) *One company 901st Chemical Regiment.*—Attachment of this unit enables the 1st Brigade to screen with smoke the advance of the force making the principal effort.

(4) *One company 1st Antimechanized Battalion.* — Control of this unit enables the brigade commander to provide antimechanized protection on the exposed west flank in addition to that which the regimental antimechanized companies are able to furnish.

b. Restriction on artillery fires. — Fires of the artillery with the 1st Brigade cannot interfere with the advance of the 2d

Brigade prior to about 8:00 AM. After that hour, these fires should be held north of a designated line to avoid interference with the advance of the main attack.

11. MAIN ATTACK.—The attack of the 2d Brigade is the decisive effort of the division. The direction of the main attack in this situation clears, by considerable distance, the known enemy position. No boundary is necessary to coordinate the action of the two brigades. Troops making the main attack should not be required to cross the high ground between Foreston (395-723) and road junction 760 (390-721). The places where the main attack will encounter opposition and the strength of that opposition cannot be predicted accurately. The mass of supporting means should be situated to favor the advance of the main attack against any opposition which may be encountered. Designation of a line of departure may be left to the brigade commander.

12. DIVISION RESERVE.—The reserve should be kept to a minimum. The division reserve should not exceed two battalions and not more than one of these should be taken from either brigade. A chemical company should be attached to assist the division reserve when it is committed. The reserve cannot be located on the east flank of the main attack without the excessive marching of some unit.

13. OTHER ARMS. — *a. Artillery.* — The designation of specific position areas for the artillery supporting the main attack is not necessary although it may be done for the information of other troops. An area generally in rear of the 2d Brigade is designated for positions for the 3d Field Artillery (less one battalion) in order to insure security and convenience of control. The ridge along the Blackrock Road is a general locality where opposition is to be expected, therefore the artillery is directed to be prepared to mass its fires along this ridge.

b. Cavalry. — Reinforcement of the force opposing the 1st Division is a Red capability. To meet a possible threat by enemy reinforcements the cavalry on the east flank should remain under division control. It may either be withheld from action initially or be directed to advance generally abreast of and on the outer flank of the 2d Brigade in order to assist the main attack. An armored-car platoon enables the cavalry to execute, as an additional mission, reconnaissance in the direction of Baltimore to discover the approach or presence of Red reinforcements.

c. Air service.—The air service furnishes the necessary airplanes for artillery, infantry and command missions. Details of time and place of the airplanes becoming available for artillery missions are left for arrangement between the division air service and the artillery. The location selected for the initial ascension point for the observation balloon should be near the probable position area of the 3d Field Artillery.

d. Engineers. — Employment of the engineers in combat is not contemplated except in the event of a serious emergency. Points where the engineers are to assemble in case they should be needed in combat should be designated in paragraph 3 of the order.

e. Chemical troops.—All companies of the 1st Battalion 901st Chemical Regiment are attached to other units. The battalion headquarters should remain directly under the division commander to supply chemical ammunition. For purposes of coordination, the order should announce a location from which the battalion headquarters will operate. This location should be in the vicinity of the assembly area of the main attack force because a greater consumption of chemical ammunition is to be expected in the main attack.

f. Line of communication troops.—The 910th Infantry (L of C) is a combat element of the division and as such is assigned a mission in paragraph 3 of the order.

g. Antiaircraft. — One antiaircraft machine-gun platoon is attached to the 1st Brigade where it may be used for protecting the brigade reserve. The remainder of the Provisional Battalion 104th Coast Artillery (AA) is disposed to protect the enveloping force, division and 2d Brigade reserves, and the division command post.

h. Antimechanized battalion.—The main attack should be favored in antimechanized protection as in other means for combat. Roads leading from the direction of Baltimore are likely routes of approach for hostile mechanized elements moving against the 1st Division. The antimechanized battalion, less elements attached to the 1st Brigade, should remain directly under the division commander and should be directed to protect the left flank of the 1st Division.

14. PARAGRAPH 5. — Paragraph 5 *a* of the field order should contain a reference to the signal communication annex which, as stated in the problem, was prepared by 7:00 PM, 9 December. This annex is not required in the solution. The command post of the 1st Brigade is in a suitable location and need not be moved prior to the attack. The division command post should be located for the attack near the assembly area of the enveloping force because in this situation the mass of the division is in the maneuvering force. This location will facilitate command of the main attack force, the mass of the artillery, and the division reserve, those units with which the commander plans to gain a decision. The command post of the 2d Brigade should be located initially in the assembly area of this unit. To avoid an early displacement of the command post after the attack is launched, the location should be as far forward in the assembly area as the terrain permits. The necessity for displacement of the command posts of the brigades during the attack can be foreseen, particularly in the case of the 2d Brigade, but it is impracticable to plan these movements in advance. Displacements of the command post during the attack depend upon the maneuver of the troops, which in the case of the 2d Brigade will depend upon the enemy situation which will develop. The enemy situation which the 2d Brigade will meet in its attack cannot be predicted at the time the order is prepared. Should the enemy withdraw on the front of the 1st Brigade, a displacement of the brigade command post may be required. However, at the time the order is prepared, the direction of the displacement cannot be predicted. Hence, the order may require that the brigades report to the division any displacements of command posts prior to the time of displacement. A displacement of the division command post probably will not be necessary because the objective of the main attack is only a short distance from the assembly area. If a displacement is required, the division command post will in all probability follow the axis of signal communication of the 2d Brigade. For these reasons the assignment of axes of signal communication at the time the field order is issued is not advisable in this situation.

15. TECHNIQUE OF ORDER. — *a.* The object of all devices of form and technique in a combat order is to make the order one which can be readily understood. Brevity is desirable but only so far as it is consistent with clearness. The operation map and written portion of the order together should set forth clearly the action of the command as a whole and the part each subor-

dinate unit is to play. It is not important that any particular item be shown on the map rather than in the written portion, or vice versa, except that the decision should be stated in the written portion. An operation map so cluttered up with marks that one symbol obscures another is not only useless; it is dangerous.

b. Abbreviations are desirable in that their use makes for brevity. Only authorized abbreviations should be used if misunderstandings are to be avoided.

c. The order should assign a mission to every combat element of the division; otherwise, it is not complete.

RELATION BETWEEN COMMAND AND STAFF

I desire particularly to invite your attention to the name of the School—The Command and General Staff School. The command, the staff and the troops form a team. No one element can function properly without the others. We emphasize these three elements and draw clear distinctions between the provinces in which each operates. The powers and limitations of each must be known to enable you to function properly and efficiently in any position in this team. We stress command. We maintain that the ability to command is the greatest of military attributes. We hold that the ability to make clear cut, definite decisions and to carry those decisions through to fulfillment requires fortitude and character of the highest degree. We believe that commanders and staff officers should be trained in the same school. We hold that the commander, no matter how able, is that much better commander if he knows and is thoroughly familiar with the duties of his general staff and how it functions. Conversely, the general staff officer is that much better general staff officer if he is trained to look upon his problems from the viewpoint of the commander.—Major General H. J. Brees, U. S. A.

From Address, *Opening Exercises, 3 September 1935.*

Directory of Periodicals

Included in this directory are only those periodicals from which articles have been selected. See also, "List of Periodicals Indexed and Key to Abbreviations."

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Marine Corps Gazette 90
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Catalog of Selected Periodical Articles

This section catalogs the articles selected from Library periodicals for the current quarter. Periodicals in this catalog are arranged alphabetically.

ARMY ORDNANCE

September-October 1939

THE STATE OF ENGLAND'S DEFENSE. STAGGERING COSTS OF A POLICY OF UNPREPAREDNESS. Major General Fuller

TO KEEP THE GUNS FIRING. EQUIPMENT OF THE MODERN ORDNANCE MAINTENANCE COMPANY. Lieut. Colonel Armstrong

OUR PRESENT MILITARY POSITION. General Craig

HIGH EXPLOSIVE BOMBS. DEBUNKING THE JARGON THAT MAKES THE HEADLINES. Tenney L. Davis

ORDNANCE RESEARCH. THE IMPORTANCE OF UNIFORM METAL PRODUCTS FOR ARMAMENT. Major Ritchie

ARMY QUARTERLY (Great Britain)

October 1939

WAR: SOME RECENT GERMAN IDEAS

AUSTRALIA'S NEW ARMY. Donald Cowie

AN AMPHIBIOUS CAMPAIGN — NORTH HOLLAND, 1799. Lieut. Colonel Burne

BULLETIN BELGE DES SCIENCES MILITAIRES (Belgium)

BY CAPTAIN W. E. LORENCE, Corps of Engineers

April 1939

EIGHTEEN MONTHS OF WAR IN CHINA (1937-1938).
[Dix-huit mois de guerre en Chine (1937-1938).] (IV) Captain Materne

The fourth instalment briefly summarizes the operation about Canton (11-23 October 1938). The Chinese believed the difficult terrain would aid them in the defense of Canton and looked forward to a second Shanghai. However, the Cantonese, excellent in civil warfare, were faced with a modern Japanese army and without the Chinese veterans of Shanghai. Chiang Kai-shek had drawn heavily on the army defending Canton for his operations at Hankow. This, the author states, accounted for the easy Japanese conquest of Canton.

A STUDY OF THE DEFENSE OF A COAST LINE.
[Etude sur la défense de la Côte.] (I) Lieut. Colonel de Pauw

The first instalment begins with the declared intention of Belgium to remain strictly neutral and independent. However, the author feels that Belgium always must be prepared to defend herself by land, air and sea, and a menace to her 37 miles of coast line forms an important part of the study. If Belgium, during a conflict between certain powers, has the good fortune to remain neutral, it will still be necessary to employ measures to prevent belligerents from violating the laws of war in her neutral waters and ports. Should Belgium be drawn into the conflict and become a belligerent, it will be necessary to defend her coast line in order that allied assistance may have the use of her port facilities for troops and supplies. The author then discusses five possible forms of attack. First, the bombardment by isolated vessels which must be met by rapid-firing coast guns, by small torpedo-motor boats or submarines or by air bombers. Second, the blockade of the harbors by surface craft, submarines or minefields must likewise be met by naval counter-measures. Third, are raids by isolated ships or fourth, large-scale raids on the harbors, both of which are problems for the navy to solve. Finally, it is the landing on the coast which primarily interests the military student.

In a landing on the coast, the invading force is most vulnerable while the boats are approaching the shore and when they first gain a foothold. This must be met with an overwhelming flanking fire from the infantry

weapons because frontal artillery fire is limited. Once ashore, the invader will attempt to form bridgeheads and move inland away from the shore. To meet this threat, the defense should locate his local reserves in places from which he can counterattack. The air service must furnish early information of an intended landing. However, since this is difficult because of the North Sea fogs, ground observation along the coast will also be necessary.

The author states that the complexity and importance of such a defense would justify the appointment, in peace time, of an officer of high rank as the Coast Defense Commander. To allow the command to fall to the senior officer, or a succession of them, who happens to arrive with the reinforcing troop would lead to confusion.

THE SOCIAL AND EDUCATIONAL ROLE OF THE ARMY.
[Rôle social et éducatif du Commandement.] J. Verheyen

A chaplain's view of the social and educational objective in the army. The social and educational objectives must be considered in relation to a proper understanding of the leisure time of the soldier. Thousands of Belgian youth, through daily contact in the army, carry with them through life the social and moral influence of their superiors. The young men who join the army are 20 years of age and ought to be educated. Unfortunately, such is not always the case, and the army should use part of the leisure time of the soldier to fit him for work when he returns to civil life. Vocational work as electricians, automobile repair work, diamond cutting, agriculture and special cultural courses would accomplish this purpose.

May 1939

THE ROYAL DUTCH ARMY.
[L'Armée Royale Néerlandaise.] Anonymous

A short discussion by an anonymous Dutch official, during the visit of the Queen of the Netherlands to Belgium, on the measures taken by Holland to strengthen her military forces since the recent crisis in European affairs. The Dutch, like the Belgians, intend to use every means in their power to defend the integrity of their country. The author does not describe the Dutch Army but briefly indicates the recent changes that have taken place. The period of training for recruits, 5½ months, in force up to 1938, is now considered inadequate and has been doubled. The number of junior officers has been increased. More attention is now given to the training of both officers and noncommissioned officers. In addition, large purchases of up-to-date antiaircraft and antitank weapons have been made.

EIGHTEEN MONTHS OF WAR IN CHINA (1937-1938).
[Dix-huit mois de guerre en Chine (1937-1938).] (V) Captain Materne

In his final instalment of his narrative of eighteen months of war in China, to the end of 1938, the author gives a summary of results accomplished and his observations thereon.

After eighteen months of warfare, the Japanese have become the masters of nearly the entire network of Chinese railways. The strategic objective of the Japanese General Staff has been attained with little delay. The Chinese, deprived from access to the sea are forced to use the interior caravan trails for the supply of its armies. However, the war of attrition seems to favor the Chinese. Japan cannot stop completely the supply of arms and munitions from the west. Japanese control extends no further than her military garrisons in spite of her creation of puppet states over vast areas. The patient strategy of General Chiang Kai-shek by not attempting to pit his inadequately equipped forces against the modern armies of Japan is bearing fruit. By the use of innumerable guerrilla bands, he is making full use of means of attrition available. Thus the decision appears to be as far off as ever. In addition, the Russian menace in the north places a heavy drain on Japanese manpower.

A STUDY OF THE DEFENSE OF A COAST LINE.
[Etude sur la défense de la côte.] (II) Lieut. Colonel de Pauw

In this second and concluding instalment, the author urges the formation of a definite Belgian coast defense organization, utilizing existing means wherever possible. He discusses the formation of a permament staff, the training and allotment of infantry, artillery, air service, engineers and anti-aircraft units for this purpose. In addition, he urges the creation of a small naval force for Belgium, to consist of destroyers, mine-sweepers, trawlers and anti-submarine devices to assist the army in coast defense operations.

PROTECTION OF ARTILLERY AGAINST TANKS.
[L'Artillerie face aux chars. — Défensive.] Lieutenant Rousseau

The author discusses the problem of antitank action by the artillery and the execution of appropriate fire missions. He takes up the choice and organization of artillery positions and the effect of their location on possible tank attacks. It is highly desirable to see that battery positions are selected whereby the guns may be converted into antitank weapons and to deploy the artillery in such a way that these batteries lend themselves to mutual support. However, in the choice of artillery positions, the normal fire missions of the artillery must always be considered. This requires a thorough examination of the terrain and due consideration of the tactical situation. The author then takes up in detail the antitank action of the artillery, both close and distant, during various operations.

The author discusses this problem from a purely military point of view and does not discuss the use of antitank mines and other obstacles to assist in the protection.

June 1939

WITH A MACHINE-GUN SECTION IN THE FLANDERS OFFENSIVE.
[Avec une section de Mi. à l'offensive des Flandres.] Captain Gorremans

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WITH THE POLISH TROOPS FROM MAYENCE TO VARSOVIE.
[Avec les troupes polonaises de Mayence à Varsovie.] Major Branders

Two contributions to the pages of history of the Belgian Army during the World War. The first describes the experiences of a machine-gun section in the Flanders offensive, September-October 1918. The second is an account of a Belgian convoy officer's journey during the repatriation of General Haller's Polish Army from France during April 1919. It includes copies of movement orders from GHQ of the Allied Army.

PHOTOGRAMMETRY AT THE MILITARY CARTOGRAPHICAL INSTITUTE.
[La photogrammétrie à l'Institut Cartographique Militaire.] Major-General Ley

It has become necessary to revise the control net of the Belgian national survey in order to provide maps of greater accuracy for modern artillery firing. In addition, civil requirements also demand more frequent revisions than in the past. The production of maps by the old survey methods takes too long and some use is now being made of aerial photographs to reduce this period of time. The use of aerial photographs and the employment of photogrammetrical methods will increase the speed of operations, reducing the time period in half. However, it will require a large increase in staff and technical apparatus.

The author then gives a detailed account of the photogrammetrical method employed at the Military Cartographical Institute. The article is well illustrated with photographs of the apparatus in use at the Institute.

TACTICAL MODIFICATIONS INVOLVED IN THE EMPLOYMENT OF MOTORIZED (MECHANIZED) FORCES.
[Les modifications entrainées dans la tactique par l'emploi généralisé de la motorisation.] Colonel Bastin

The use of motorized units is not new when we recall that during the World War we moved 6,000 trucks every 24 hours over the Sacred Road at Verdun. Toward the close of the World War, the Allies had over 200,000 trucks on the Western Front. Motorization had a profound influence on tactics. In 1917, during the preparation of the third Battle of Ypres, the British fired more than four million rounds equivalent to 35,000 three-ton truck loads.

Tanks and antitank weapons have influenced profoundly the employment of motorized units. There are two general schools of thought on the subject of tank tactics. The French advocate close cooperation between tanks and infantry; the Germans believe in a deep, rapid penetration by tanks, leaving to motorized infantry the task of securing the ground. The Germans neglect the effect of antitank weapons and the fact that tanks are semi-blind during a rapid advance, whereas the French believe tanks require the support of the infantry automatic weapons to overcome the antitank weapons. They also claim that the moral effect of tanks is chiefly operative only while such tanks are advancing and in view. When they are not followed by infantry, and are out of sight, they permit the defender to come out of shelter and renew the defense. Land mines also cause havoc among such vehicles and a field of stranded tanks is not secure ground.

The mean between the two extreme schools of thought offers the best chance of success; i.e., employing successive waves of tanks, each with a different task to perform. The leading wave, consisting of light fast tanks must do the raiding. Being light tanks, they cannot be heavily armored and are therefore vulnerable to antitank weapons. They must depend upon speed and light automatic guns, and be supported by infantry and engineer demolition parties travelling at the same rate of speed. Succeeding waves of tanks must be employed to clean up and extend the gap. Ground which has been previously pounded by prolonged artillery bombardment naturally affords the worst possible avenue of approach for a successful offensive by mechanized forces.

CAVALRY JOURNAL

July-August 1939

DRESS REHEARSAL FOR THE NEXT WORLD WAR. Major Hargreaves, British Army, Retired
TANK ATTACK IN SPAIN. Brigadier General Reilly
MOBILITY — FIRE POWER AND SHOCK. Captain Sears
TRAINING OF MODERN CAVALRY FOR WAR. Polish cavalry doctrine
HORSES FOR DEFENSE

September-October 1939

MOULDING MEN FOR BATTLE. Major General Ely
POLAND BETWEEN TWO CAMPS
WAR LESSONS
LITTLE PHIL. Fletcher Pratt
MILITARY ASPECTS OF SUDETEN CRISIS. Colonel Lanza
CAVALRY SHOCK TACTICS. Colonel Stewart, Indian Army
GENERAL HAWKINS' NOTES: MOTORIZED INFANTRY PROTECTED BY CAVALRY

CAVALRY JOURNAL (Great Britain)

October 1939

SOME THOUGHTS ON LEADERSHIP. By "Zor Kishau"
THE CAVALRY OF FREDERICK THE GREAT. H. S. Stewart

COAST ARTILLERY JOURNAL

September-October 1939

DEFENSE AGAINST NIGHT BOMBARDMENT. Captain Nicholson
AIR MANEUVERS OVER GREAT BRITAIN. Major General Rowan-Robinson
MOULDING MEN FOR BATTLE. Major General Ely
WORD MAGIC OF THE MILITARY MYSTICS. Major Phillips
LITTLE PHIL. Part I. Fletcher Pratt
KITCHENER AND GALLIPOLI. H. A. DeWeerd
MANASSAS MANEUVERS. Colonel Thompson
HISTORY OF ARMY MINE PLANTERS. Warrant Officer Jones
STORY OF ARTILLERY THROUGH THE AGES. W. A. Windas

FIELD ARTILLERY JOURNAL

July-August 1939

NEW APPLICATIONS OF OLD PRINCIPLES. Colonel Lanza
A SYMPOSIUM ON LEADERSHIP. Captain Gildart
ATTACK IN SPAIN. Brigadier General Reilly

FIGHTING FORCES (Great Britain)

August 1939

BOMBERS AND FIGHTERS. J. M. Spaight
I. — EARLY'S VALLEY CAMPAIGN. Lieut. Colonel Burne
"SPANISH WAR THEME." By Our Air Correspondent

October 1939

THE WAR IN THE AIR, SEPTEMBER, 1939
THE WAR ON LAND
THE WAR AT SEA
BRITAIN'S NEW BATTLESHIPS. R. V. B. Blackman
AMPHIBIOUS OPERATIONS — LESSONS FROM THE PAST. Lieut. Colonel Burne

INFANTRY JOURNAL

September-October 1939

WORD MAGIC OF THE MILITARY MYSTICS. Major Phillips
MOLDING MEN FOR BATTLE. Major General Ely
LITTLE PHIL. (I) Fletcher Pratt
BATTLEFIELD INERTIA. Colonel Lang
KITCHENER AND GALLIPOLI. H. A. DeWeerd

JOURNAL OF THE AMERICAN MILITARY INSTITUTE

Summer 1939

THE FALL OF RICHMOND. EVACUATION AND OCCUPATION. By Dallas D. Irvine
THE MEN THAT FOUGHT AT MINDEN. Major Elliott, Retired

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS (Great Britain)

August 1939

AIR RAID CASUALTIES. Colonel Weddell

September 1939

MECHANIZED FIELD AMBULANCE TRAINING: GIBRALTAR. Major Cox

JOURNAL OF THE ROYAL ARTILLERY (Great Britain)

October 1939

"THE BATTLEFIELD OF THE FUTURE SHOULD PRESENT GREAT POSSIBILITIES FOR THE EMPLOYMENT OF ARTILLERY FIRE OBSERVED FROM THE AIR, BOTH AGAINST STATIONARY TARGETS SUCH AS THE ENEMY'S ARTILLERY, AND MOVING TARGETS, SUCH AS RESERVES OF MECHANISED TROOPS.

"DO OUR PRESENT METHODS TAKE FULL ADVANTAGE OF THESE POSSIBILITIES, AND IF NOT WHAT STEPS DO YOU SUGGEST MIGHT BE TAKEN TO IMPROVE THEM?" Captain H. C. Bazeley. ["Duncan" Essay, 1938/39.]
THE SPANISH CIVIL WAR, 1936-1939. Major Johnston

JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION (Great Britain)

August 1939

TRAINING FOR HIGHER COMMAND. Air Marshal Sir Arthur Longmore
"DISCUSS THE INFLUENCE WHICH MODERN AIR FORCES MAY EXERT ON BRITISH STRATEGY IN A MAJOR EUROPEAN WAR IN WHICH GREAT BRITAIN IS INVOLVED; AND SUGGEST WHAT HIGHER CONTROL ORGANIZATION IS DESIRABLE IN ORDER TO CO-ORDINATE THE OPERATIONS OF THE THREE SERVICES." By Major Swynnerton [Second Trench Gascoigne Prize Essay (Air) 1938]
OUR NAVAL NEEDS. Captain Grenfell
HOW WARS END. Major Sheppard
ANTI-TANK TACTICS. Lieut. Colonel Hilton
NANKIN AND SHANGHAI AT THE OUTBREAK OF THE SINO-JAPANESE WAR IN 1937. Captain Maund

JOURNAL OF THE UNITED SERVICE INSTITUTION OF INDIA (Great Britain — India)

July 1939

THE STRUGGLE IN THE FAR EAST. Captain Ward
COOPERATION BETWEEN LIGHT TANKS AND INFANTRY. WITH SPECIAL APPLICATION TO MOUNTAIN WARFARE VIS-A-VIS INFANTRY BATTALION OFFICERS.

KRASNAYA ZVYEZDA (Russia)

BY LIEUTENANT JOSEPH DASHER, Military Intelligence-Reserve

20 June 1939

SMOKE SCREENS IN OFFENSIVE ACTION.
[DYMOVIYE ZAVESY PRI NASTUPLENII.) Captain L. Shishov

Modern warfare, as exemplified in Spain and in China, has illustrated that preparation by artillery and aviation prior to launching offensive action is not always effective in silencing the fire of the defending side. The defense revives and is able to inflict losses to the attackers. Then too, the terrain is not always conducive to effective concealment of troops advancing to the starting point, preparatory to offensive action. Moreover, it is a military axiom for the defensive side to so select its position, that the terrain in front of the main line of resistance would be devoid of concealed approaches. Thus it becomes necessary for the attacker to protect both men and matériel by employing such artificial means of concealment as smoke.

When skillfully used, smoke screens facilitate the capture of the zone of infantry fire and give the attacker a tactical advantage by concealing the true direction of the main advance. The maneuverability of the defensive artillery and antitank gun fire becomes seriously impaired.

22 June 1939

TWO YEARS OF WAR IN CHINA.
[DVA GODA VOYNI V KITAYE.] G. Mikhaylov

A thorough review of the Sino-Japanese conflict cannot fail in establishing the indisputable fact that the strategic plans of the Japanese command, calling for a speedy and successful termination of the war through encirclement and destruction of Chinese forces, have failed to materialize. Throughout the hostilities the Chinese army has been growing in numbers and gaining in quality, and has actually succeeded in overcoming certain serious shortcomings in its basic organization. The Chinese army has developed into a unified force of high morale and combat qualities.

The anti-Japanese sentiment of the Chinese civilian population has been a serious factor in frustrating Nippon's plans.

What then are the gains won by the Japanese in China, which, so far, has cost them some 800,000 casualties?

The Japanese forces are in doubtful control of 12 per cent of China's territory. But in these "occupied" territories there are effectively operating not less than one million guerrillas, and some 80 divisions of regular Chinese troops. Only the large cities and the principal communication lines between those cities are under Japanese control, and even here the Chinese guerrilla units frequently interfere with the regular operation of railroads, disorganizing the occupants' rear areas by frequent raids. Such control of occupied territory cannot be regarded as of lasting nature.

In the Japanese islands the war is being felt with increasing intensity. Economically the country's situation is precarious, approaching the critical stage. Japan's gold reserve is dwindling, the national debt is mounting, taxes are being increased, there is a need of many strategic raw materials as well as articles of daily necessity. Dissatisfaction has been observed not only among the civilian population, but within the armed forces as well.

The Chinese nation, on the other hand, has been able to preserve and strengthen its army, while forcing the invader to dissipate his best strength. Far in the Chinese interior more than 400 new plants and factories are producing supplies for the army.

Skillfully combining war of movement with guerrilla activities, the Chinese are effectively preventing the Japanese from gaining complete mastery of the occupied territories, while compelling the Japanese forces to maintain a state of perpetual tension both at the front and in the rear areas, thus appreciably reducing their fighting capacity.

26 June 1939

TANKS IN OFFENSIVE ACTION.
[Tanki v nastuplenii.] Brigade Commander S. Kondratyev

Thorough reconnaissance of terrain of anticipated action is mandatory for the commander of a tank unit. The tank crew does not enjoy the advantage of being able to freely observe terrain features in combat due to dust, smoke, and other impediments, both natural and man-made. During the Spanish War one-third of the tanks would be eliminated during an operation, before being able to reach the main line of resistance.

It is important to know the location of the enemy antitank installations, both in the main line of resistance and in the rear areas. In Spain and China

no antitank fire was used against reconnoitering tanks in order to conceal the location of antitank guns. Also, the positions of antitank guns were reshuffled prior to the actual attack.

Advancing tanks must know on what artillery support they can depend, and where their artillery is located. Radio communication must be maintained between tanks and the supporting artillery.

Starting points for tanks must be well camouflaged and the tanks must be supplied with sufficient fuel and ammunition, as the stop at the starting point must be very brief. At the precise moment when the main body of infantry reaches its jumping-off point, the tanks must all be at their respective starting stations. The commander of the tank battalion or his staff representative should be at the command post of the infantry regiment or battalion. The attack begins upon a signal from the command post.

During the attack infantry follows the tanks, and the latter fire while in motion, or during brief stops, aiming principally at machine-gun emplacements.

28 June 1939

CONQUERING CONTAMINATED AREAS.
[Preodolenye zarazhonnykh uchastkov.] Colonel K. Stepanov

It is not uncommon to encounter areas contaminated by the retreating enemy with persistent chemical agents. In addition to this, the enemy will blanket such areas with intensive rifle and machine-gun fire. Thus, the danger to the advancing force is double, from the fire and from the effect of the chemical agents.

Infantry personnel must be thoroughly trained in the use of all means of defense against chemical weapons, and the training should take place under conditions approximating those of actual warfare.

4 July 1939

AUTO TRANSPORT IN MOUNTAINOUS DESERT REGIONS.
[Avtoperevozki v gorno-pustynney mestnosti.] Army Engineer Chikov

Auto-transport is of paramount importance in mountainous desert regions, removed from railroads. Proper organization of auto-transport presents a number of complicated problems. Such vital matters as supplies for the personnel, repairs and replacements, fuel filling stations, water supply, synchronized movement of auto-columns over difficult terrain, and other complex problems are discussed.

9 July 1939

COOPERATION BETWEEN THE FLEET AND THE ARMY.
[Vzaimodeystvye flota i armii.] Captain E. Krylov

In the Soviet conception, the land and sea forces of the U. S. S. R. form one single organism and perform the identical mission, calling for the closest possible cohesion in coastal operations. The author anticipates that the Soviet war fleet may be called upon to aid land forces in the following cases: (1) support of the nearest flank of the land force by ships' artillery; (2) landing parties for striking against the enemy flank or rear; (3) preventing the shelling of land forces from enemy warships; (4) preventing the enemy from successful landing of parties; (5) cooperation with land forces by naval aviation.

11 July 1939

PRINCIPLES OF THE PLANNING OF FIRE FOR ARTILLERY BATTALION.
[Osnovy planirovanya ognya divizyona.] Colonel P. Lebedev

Just before the infantry attack (during the last ten minutes of artillery preparation) the fire is concentrated on the front line of resistance, i.e., on targets which impede the forward movement of infantry and tanks. This fire is intended to suppress the enemy human forces before launching our attack, and insures that the tanks will reach the front line of resistance. The firing must be so calculated as to cover all possible space, eliminating any interval from which antitank guns could fire with impunity.

Artillery action during the period of the advance of infantry and tanks into the rear of enemy's defensive positions is mapped out to cover only its initial stage. Further action is laid out only insofar as it concerns the subordination of the batteries to infantry command.

23 July 1939

COMBAT OF A CAVALRY REGIMENT IN ENCIRCLEMENT.
[Boy kavpolka v okruzhenii.] Colonel A. Rodimtsev

In wooded or swampy regions, abounding in streams, there will be frequent cases of encirclement and escape from same of smaller units (company, squadron, battalion). Action in preparation to the encirclement of the enemy will take place at night, and the attack at dawn. Speed and the concealment of movement will be of paramount importance in action of this nature.

24 July 1939

WAR FLEET OF THE GREAT SOVIET POWER.
[Voyenno-morskoy flot velikoy sovetskoy derzhavy.] Anonymous

Without quoting specific figures the unknown author reveals that in 1938 the Soviet production of warships (exclusive of submarines) was five times greater than in any preceding year of the Second Five-Year Plan period. The Soviet sea power is divided into four separate fleets: Baltic, Black Sea, Northern (Arctic) and Pacific. Strong flotillas are stationed on the Caspian Sea, and the rivers Amur and Dnyepr.

2 August 1939

THE ATTACK ON A FORTIFIED SECTOR.
[Ataka Ukryeplyonnovo rayona.] A. Gotovtsev

The modern "pill box" fortification, constructed of reinforced concrete, serves as emplacement for machine guns, antitank guns, and other artillery, and together with other field fortifications and obstacles presents a serious deterrent to any offensive action.

Due to the fact that the destruction of a strong "pill box" is costly in that it requires the expenditure of much artillery ammunition, to say nothing of time, the author recommends — among other methods — the concentration of sufficient artillery fire on the ground adjacent to the given fortification, causing such a change in the general outline of the immediate area as to render observation from the "pill box" very difficult.

In employing bombing aviation against fortifications of this type, Mr. Gotovtsev recommends dive bombing exclusively, because of accuracy.

5 August 1939

THE GERMAN BATTALION IN DEFENSIVE ACTION.
[Germanskiy batalyon v oboronye.] N. Gordienko

In the German army the infantry battalion is the smallest tactical unit. It consists of headquarters, three rifle companies and one company of heavy machine guns, and a signal platoon. Each rifle company has three rifle platoons and a machine-gun group consisting of two heavy machine guns. The heavy machine-gun company has two platoons of four guns each, and a platoon of heavy mine throwers armed with six 81-mm mine throwers.

Altogether the battalion has 14 heavy and 27 light machine guns, 800 rifles and 15 mine throwers of various calibers. As a general rule it is reinforced in action by 3 to 4 antitank guns, 2 to 3 field pieces, and it may be supported by 2 to 3 artillery batteries.

8 August 1939

NIGHT FLIGHTS.
[Nochniye polyoty.] Brigade Commander B. Sterligov

Careful study and perfection of night (instrument) flying is urged. It is increasingly necessary to: observe the enemy's nocturnal activity; employ night flights before starting offensive action at dawn; retire during the night after an evening attack; attack those objects which are not easily vulnerable in the daytime; execute swift transfers of troops for secret or immediate concentration; counteract the enemy's night aerial activities by aerial combat or by destroying his aircraft on the ground; employ obsolescent aircraft in night operations.

14 August 1939

DEFENDING ANTIAIRCRAFT ARTILLERY FROM AERIAL ATTACKS.
[Oborona zenitnoy artillerii ot vozdushnykh atak.] Major S. Grechkosiy

Review of elementary principles of the subject.

15 August 1939

THE SCIENCE OF PARACHUTE JUMPING IN THE RED ARMY.
[Parashutizm v Krasnoy Armii.] Captain N. Chernyshev

Short history of parachute science as practiced in the Soviet armed forces. The author points to the progress made in the U. S. S. R. as shown by recent results, when a group jump was made by 27 men from an altitude of 21,000 feet (in the daytime), and another group of 27 men from an altitude of 15,000 feet (at night). A third group of 7 men jumped in daytime from an altitude of 25,000 feet.

MARINE CORPS GAZETTE

September 1939

THE SPANISH-MOROCCAN ZONE. Colonel Evans
A NEW DEPARTURE IN LANDING BOATS. Lieutenant Barrows
CAMEROONS COAST CAMPAIGN. Lieutenant Heinl, Jr.

MILITARWISSENSCHAFTLICHE MITTEILUNGEN (Austria)

BY MAJOR WM. H. SPEIDEL, Infantry

April 1939

PRAGUE AND THE MEDITERRANEAN.
[Um Prag und das Mittelmeer.] Major General Paschek

A military and political review of events that occurred in the first quarter of 1939. The inclusion of Bohemia and Moravia in the German Reich, the independence of Slovakia and the occupation of Carpatho-Ukraine by Hungary. The attitude of the western powers towards Germany — the policy of encirclement. Support of the Little Entente opposed to a new Europe. A review of the increasing tension in the Mediterranean situation — Gibraltar (1704), the formation of the Rome-Berlin axis, the Spanish Civil War and the new Spain, tension between France and Italy, and the Arabian movement. Military and political developments among the western powers.

GERMANY'S PATH TO ECONOMIC INDEPENDENCE.
[Deutschlands Weg zur wirtschaftlichen Selbständigkeit.] Major Prokoph

A conclusion to the article in the March number. Germany's development of synthetic rubber has made importation unnecessary. Raw wool and

cotton are being largely replaced by the use of wood fiber and glass by cellophane. The soya bean is becoming the source of fats and oils. Germany suffered oppression; being denied the materials which Mother Nature supplied to other nations plentifully, she revolted and procured them from her own resources.

THE CONFLICT IN EASTERN ASIA.
[Der Konflikt in Ostasien.] Major General v.Lerch

An account of the operations in the Sino-Japanese conflict from 10 November 1938 to 15 March 1939, with three maps. It includes the operations in Central China around Hankow and in Southern China in the Canton area, the occupation of the Island of Hainan, guerrilla warfare in rear of the Japanese armies. General v.Lerch claims that Great Britain, France and Russia, like in Spain, are supporting the Chinese Central Government unofficially with war material; officially with loans.

THE GERMAN STEEL HELMET.
[Der deutsche Stahlhelm.] A. Brandt

An account (with seven pictures) of the development of the German helmet from the innovation of the lacquered spiked helmet in 1841 to the modern chrome-nickel-steel helmet. Shooting tests made on 400 different patterns led finally to the selection of a suitable helmet which, in the standard pattern, weighs three pounds. Eighty-three per cent of head wounds are caused by splinters; 17 per cent by bullets, an influence which led to the adoption of the modern type.

May 1939

HOW WAS CZECHOSLOVAKIA FORTIFIED?
[Wie war die Tschechoslowakei befestigt?] Major General v.Brosch-Aarenau

An account of the Czechoslovakian fortifications with one map, three pictures and two attached charts containing 15 plans and illustrations. Passive defense was the keynote of the entire system, except that at Pressburg the Engerau bridgehead anticipated the possibility of a counterstroke against Vienna.

The large number of machine-gun posts, or bunkers, indicates their popularity with the Czechs. These had to be approached usually in the open. They were very vulnerable to direct artillery fire, but less so to curved fire. They necessitated crowding and afforded poor ventilation, exposing them to the effects of gas attacks. There were no sanitary arrangements. The absence of frontal fire in the front line of defense appears to have been ignored.

A shell-proof (proof against shells of 1.2-inch caliber) work south of Znaim was constructed of poured reinforced concrete. It is a fact that unreinforced concrete has greater resistance to shell fire than reinforced concrete, and that rammed is much stronger than poured concrete. It had the same general defects as the machine-gun posts.

There was an extravagant use of obstacles. About 320 tons of steel per mile were used. Tank ditches, that might have been avoided by tanks, were limited.

Colonel Biermann considers that the French would require 275,000 men to garrison their 930-mile-long eastern front from Nice to Dunkirk. On this assumption he believes that, because of their considerably weaker fortifications and longer front, the Czechs would have required a garrison of 500,000 men. The Czechs, during the crisis, had an army of 750,000 men. This means that two-thirds would have been required for garrisoning the fortifications.

THE NEW HUNGARIAN MILITARY LAW.
[Das neue ungarische Wehrgesetz.] General Németh

The Hungarian law providing for universal military service incorporates:

(1) The "Levante," a system of physical training for males between the ages of 12 and 22, or entry into active service, requiring an attendance of four hours per week during the months of the year and a participation during the 18th year in a three-weeks exercise. Members wear a simple uniform.

(2) The "Honved," consisting of the army, air force, and river force, and prescribing universal service for all males between the ages of 18 and 60. Active service is from two to three years, thereafter with the I, II and III reserves.

(3) Both sexes, between the ages of 14 and 70 are required to render personal services.

THE SPANISH CIVIL WAR.
[Der Bürgerkrieg in Spanien.] Major General v.Lerch

The twelfth and final installment, with one sketch, of the events that happened up to 31 March 1939. The fall of Barcelona on 26 January 1939 decided the fate of the Catalonian Army and the result of the three years' Civil War in favor of the Nationalists. The Red influence began to weaken and steps were taken in secret to throw off the yoke of its oppression when the opportunity arrived. Catalonia fell and on 8 March General Franco effected a blockade of the entire Spanish coast, cutting off all communication with the outside, and resulting in the collapse of the resistance of the Republican Army.

June 1939

PRESENT-DAY QUESTIONS ON SEA POWER.
[Seemachtfragen von heute.] Commander Handel-Mazzetti

Pertaining mainly to the Far East and the Mediterranean, this article explains its subject by means of maps.

Whoever rules the sea controls the areas of colonization and access to raw materials. As compared with France, the distribution of their colonies is in proportion to the size of their navies. Japan, dependent upon the sea as their only avenue of approach to foreign markets, has in recent years kept the expansion of her navy in step with her territorial expansion. Singapore, Hong Kong and Port Darwin, however, block her further expansion southward.

Today, every state, whether its frontier is its home seacoast or not, falls within the influence of the combination of the powers and therefore, it is obligated to safeguard the interests of its navy. This applies particularly to the German situation.

THE OIL FIELDS IN THE TERRITORY OF THE GALICIAN AND RUMANIAN WAR ZONE, 1914-1918.
[Das Erdöl auf dem Gebiete des galizischen und des rumänischen Kriegsschauplatzes 1914-1918.] Dr. Friedensburg

During the fall of 1916, Germany controlled almost all of Rumania, a situation which continued until the end of the war. It was during this time that England and France carried out the destruction of the Rumanian oil fields, a damage estimated to involve a loss of 76 million dollars. Out of nearly two million tons of oil, only 300,000 were left to the Germans.

Two months after the destruction, however, the Germans were able to use the first bore hole and, at the time of the armistice, the refineries were yielding about two-thirds of their normal supply.

CALIBER OF ANTIAIRCRAFT WEAPONS.
[Uber das Kaliber von Flakwaffen.] Major General Rieder

The text is illustrated by means of six pictures showing the effects of various calibers of antiaircraft weapons on boiler plate and airplane wings.

THE DANUBE-ODER CANAL.
[Der Donau — Oder-Kanal.] Lieut.-Field Marshal Dick

This article with one sketch explains the development of the canal project. When complete (five years' construction anticipated) the canal will accommodate 1,000-ton ships. Leaving the Danube at Vienna it extends 169 miles, joining the Oder at Oderberg. Twenty-nine locks will be required in its construction. Rivers will not be canalized, but will be paralleled by separate channels.

The canal will complete a system connecting the Rhine, Elbe, Danube, Oder and Vistula Rivers, thereby interconnecting the North Sea, the Baltic and the Black Sea.

THE CONFLICT IN EAST ASIA.
[Der Konflikt in Ostasien.] Major General v.Lerch

A further installment of the war in the Far East, covering the period 15 March to 10 May 1939. The capture of Nanchang by the Japanese. The great counteroffensive by the Chinese in April. Hainan Island. Aircraft activities. Revolt of the Moslem Chinese. The cost of the Far Eastern conflict.

MILITAR-WOCHENBLATT (Germany)

BY MAJOR WM. H. SPEIDEL, Infantry

18 November 1938

GUERRILLA WARFARE AND MOTORIZATION.
["Motorisierte" Gedankensplitter aus aller Welt: Der Guerillakrieg und die Motorisierung.] Lieut. Colonel Braun

(See digest, page 55; also, Military Review No. 73, June 1939, page 59.)

25 November 1938

THE MOTORCYCLE SQUADRON IN ACTION.
[Die Radfahrerschwadron im Manöver.]

In spite of the fact that the motorcycle has been with us for only a short time it is already regarded as indispensable. The Jägers were the elite of the German infantry. The motorcycle companies are about to take their place.

Motorcycle troops have great mobility. They can penetrate woods and cross streams that are an obstacle to other motorized troops.

The cost of maintenance is much less than that of other motorized units. Gas consumption, replacement of parts, and training of the operators is simplified.

The motorcycle messenger is an elusive agent, penetrating the hostile line with astonishing facility and returning within a short time with valuable information. The results of his employment in patrolling are highly effective.

2 December 1938

COMBAT EXPLOITATION OF THE HIGHWAY.
[Die Strasse als Kampfmittel.] Colonel v.Schaewen

The great significance which a well developed road net bears to the conduct of war is one which pertains to the fixed conceptions of strategy and tactics. This significance has increased with the modern development of military transportation and the mass of matériel that must be routed on the highways.

CAN TRAINING DEVELOP HEROES?
[Kann man Helden erziehen?] Lieut. Colonel Braun

In peace time it is the task of training to develop potential war heroes — men of action, displaying qualities of the highest type of spiritual and corporal discipline; men who lead solely by means of faultless precept, who in the hour of greatest danger are capable of firm fortitude; men who exemplify the perfect character, who, during a fatal emergency, rally their men like a magnet without recourse to orders or bellowing commands.

THE INFLUENCE OF WEATHER ON THE PERFORMANCE OF AIRCRAFT WEAPONS.
[Der Einfluss des Wetters auf die Tätigkeit der Luftwaffe.] Colonel Nagel

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THE JAPANESE AIRCRAFT EQUIPMENT AND ITS EMPLOYMENT IN CHINA.
[Die japanischen Kampfflugzeuge und ihr Einsatz in China.]

ISSUING ORDERS IN THE SOVIET-RUSSIAN ARMY.
[Befehlsgebung in der sowjet-russischen Armee.] Lieut. Colonel v.Rohden

Usually the Chief of Staff is concerned merely with the fact that his plan is effectively executed. The manner in which it is executed is immaterial.

His plan is studied and criticized for about ten or fifteen minutes. He then gives G-3 a short summary of the orders that are to be issued to the troops, and informs the chiefs of the other staff, and technical groups what means are at their disposal. Simultaneously, the group leader of the political detachment, having been informed of the situation by the organization's political commissar, initiates operations within his detachment. Twenty to thirty minutes is then devoted to working out a definite decision by a joint conference between the commander, his chief of staff and the political commissar. When a final decision has been reached it is formed into an order by the commander or the political commissar. The political commissar, the chief of staff, G-3 and, when authorized, other group leaders and commanders of the technical staffs are present when the orders are issued. It is imperative that the officers commanding organizations and units immediately affected also be present. G-3 records the decision of the commander in the form of an order, and the officers whose units are affected thereby make the necessary notations on the maps. The latter, then, after their notations have been verified by the chief of staff and G-3, proceed immediately to their respective staffs. G-3 confers with G-4, and the chief of staff informs the staff groups how the objective can best be accomplished with the means at their disposal.

THE CONFLICT IN THE FAR EAST.
[Vom Konflikt im Fernen Osten.] Colonel v.Xylander

9 December 1938

THE OPERATIVE SIGNIFICANCE OF THE FORTIFIED ELB LINE IN THE CONDUCT OF NAPOLEON'S AUTUMN CAMPAIGN OF 1813, AS DETERMINED BY MODERN OBSERVATION.
[Die operative Bedeutung der befestigten Elb-Linie für die Heerführung Napoleons im Herbstfeldzug 1813 unter neuzeitlicher Betrachtung.] Major General Klingbeil

This study is accompanied by five sketches. Following an introduction in which Napoleon decides to reach a decision upon the field of battle, it presents a short account of the campaign under the following captions:

(1) The operative advantage, and the offensive method, of defending the river line.
(2) Dresden and the position of readiness near Stolpen.
(3) The abandonment of the active defense of the river line.
(4) From Wartenburg to Leipzig.

WHAT WILL HAPPEN TO ARTILLERY?
[Was wird aus der Artillerie?] Lieut. General Marx

(1) The panoramic sight: Recommend return to the sight divided twice into 3,200 mils rather than once into 6,400.

(2) Range: The more we increase the muzzle velocity, the lower becomes the elevation and consequently the more difficult the problem of concealment.

(3) Noiseless charge? We have experimented for fifty years. It will never be possible to eliminate the sound of discharge. The sound at impact is highly desirable. It might be possible eventually to eliminate muzzle blast. But how? Increased weight is impracticable.

(4) Improvement of the projectile: Perhaps a more effective bursting charge might be discovered that would have a good effect on morale. But there we have the danger that the casing will be blasted into particles too fine to be effective.

(5) Aiming circles? What is there about them that still can be improved. In Austria we had the Baumann type, that eliminated the difficulties presented by the difference in positions of several targets. We were justified in discarding it before the war, as it was very complicated. However, these differences may be adjusted either by estimation or pacing.

(6) Means of observation? Since 1898 we have had the scissors telescope with improvements. The objective has been to enlarge the picture, but the greater the enlargement the more indistinct the details due to mirage, etc. The tendency has been to favor 6-power in preference to 8.

(7) Expansion? It will develop slowly.

What the artilleryman actually needs is sufficient ammunition with which to employ his guns with the utmost effectiveness.

16 December 1938

RECONNAISSANCE CAVALRY VERSUS TANKS.
[Aufklärende Kavallerie gegen Panzerkraftwagen.] Ritter von Gonnermann

During the World War, even under the most hazardous conditions, it was shown that tanks, as compared even with absolutely defenseless cavalry patrols, were not capable of conducting reconnaissance independently. On the Western Front it was the motorcycle patrols who, operating on the excellent road net and supported by their own telephone lines, cooperated with the tanks in an attempt to encircle the cavalry patrols. In this they were partly assisted by blocking the woods with wire enclosures. On the Eastern Front it was principally the Russian cavalry that harassed the German horsemen. Even under the most trying circumstances our cavalry patrols always came through with information.

If this were possible to a defenseless cavalry, then reconnaissance cavalry, equipped with the weapons of its mechanized opponent and assured of ample freedom of movement, will be well able to encounter without fear the tanks of today.

THIS YEAR'S TRAINING EXERCISES AND MANEUVER OF THE BRITISH ARMY.
[Die diesjährigen Ubungen und Manöver des englischen Heeres.]

THE MISSION AND EMPLOYMENT OF GRENADE THROWERS.
[Aufgabe und Einsatz von Granatwerfern.] Lieutenant Telle

IS THE ATTACK OR THE DEFENSE THE STRONGER METHOD OF COMBAT?
[Ist der Angriff oder die Verteidigung die stärkere Kampfform?] Captain Ruprecht

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OUR TRAINING CENTERS.
[Unsere Truppenübungsplätze.] Major Voss

23 December 1938

TRAINING IN THE MEETING ENGAGEMENT.
[Schulung im Begegnungsgefecht.] Major Krebs

The basic training in the meeting engagement was a peculiar forte of the German army prior to the World War. The successes in the battles of the frontier of 1914 on the Eastern Front were convincing to what extent the German army excelled all its opponents in this method of combat.

Training in the basic principles of this method of combat is an asset to the education in other methods of combat. It must not lead, however, to an unplanned disposition of the covering forces. The very crux of the training problem lies in developing the leaders in this form of combat.

THE OLD SOLDIERS' WISH FOR 1939.
[Ein Wunsch der alten Soldaten für 1939.] Lieut. General Marx

It is desired that a return be made to the traditional regiments with respect to numerical designation, provincial extraction, and location of their garrisons.

MARCHES OF MOTORIZED UNITS.
[Märsche motorisierter Verbände.]

During the maneuver of 28 to 30 April 1938, held in England, the 2d Division covered some march tests to determine the effect of aerial attacks. The division at war strength was composed of 3 infantry brigades (each brigade 3 battalions), 1 mechanized cavalry regiment, 3 field artillery regiments, 1 antiaircraft regiment, 1 pioneer battalion (4 companies), 1 signal detachment and complete auxiliary and supply units. With the exception of the infantry, all were motorized.

The division commander, in determining whether he would march by day or night, weighed the following points:

(1) Amount of time available, especially in the event of a long march, before he would be involved in combat.
(2) Physical condition of his troops, including the strain on the drivers and equipment.
(3) Aerial situation.
(4) The presence of vehicles, such as tanks and medium artillery, easily recognized from the air.
(5) Condition of the road net.
(6) Season — long or short nights.
(7) Weather — clouds, fog, visibility.
(8) The danger of establishing billeting areas, when these are selected during daylight.

THE BELGIAN ARMY FROM THE ITALIAN VIEWPOINT.
[Das belgische Heer, von italienischer Seite gesehen.] Lieutenant Himpe

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SECURITY OF THE MARCH IN THE MOUNTAINS.
[Marschsicherung im Gebirge.] Lieut. Colonel Roma

1 January 1939

THE ARMY DURING THE YEAR 1938.
[Das Heer im Jahre 1938.]

RECENT OBSERVATIONS ON FORMIDABLE RIVER CROSSINGS.
[Neuzeitliche Anschauungen über den gewaltsamen Flussübergang.] Major General Klingbeil

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EMPLOYMENT OF ANTITANK WEAPONS ON SPECIAL MISSIONS.
[Einsatz von Panzerabwehrwaffen zu besonderen Aufgaben.]

COMBAT INTELLIGENCE AND OBSERVATION SERVICE OF THE INFANTRY.
[Gefechtsmelde- und -beobachtungsdienst der Infanterie.]

MARCH IN THE MOUNTAINS.
[Marsch im Gebirge.] Lieut. Colonel Roma

LIGHT BATTLE PLANES IN MODERN WARFARE.
[Das leichte Kampfflugzeug im modernen Kriege.]

MILITARY INSTRUCTION IN THE ITALIAN SCHOOLS.
[Militärischer Unterricht in den Schulen Italiens.]

6 January 1939

A WOE-BEGOTTEN CHILD.
[Ein Schmerzenskind.]

It is the purpose of every delaying action to gain time by deceiving, and inflicting every possible damage upon, the enemy. If an enemy, deployed on a broad front, threatens defeat, we must avoid a decision by withdrawing opportunely in order to reform and fight again in the new position.

The critical points of the delaying action hinges on the withdrawal. Two new fundamental principles are presented:

(1) Severe casualties must be inflicted on the enemy: he must be held up, but a decision must not be reached.
(2) No subordinate commander, only the troop commander may give the order to initiate the withdrawal.

By troop commander is understood the highest commander who controls the means which would effect the delaying action. In larger units this does not even mean the division commander.

If decisive action threatens, the control of the delaying action, except for the decision, may be turned over to the subordinate commander, who determines when the fighting is to be suspended. Until the troops receive the order to withdraw, they must hold their ground, even though they are required to fight strenuously and become confronted with local crises. The line on which the delaying action is fought becomes for them the main line of resistance.

SHORT SURVEY OF THE EMPLOYMENT OF BATTLE PLANE PILOTS IN THE WORLD WAR.
[Kurzer Uberblick über die Verwendung der Schlachtflieger im Weltkriege.] Lieut. Colonel von Loewenstern

The missions were:

(1) Support of the ground troops, and as a special mission of opportunity;
(2) Support of reconnaissance planes by protective flights.

ANOTHER "GAP IN THE REALM OF WAR LITERATURE."
[Und noch eine "Lücke im Wehrschrifttum."] Lieut. General Marx

This "gap" refers to the niche which might be occupied by literature devoted to siege warfare. General Marx calls attention to the works of v.Müller, Spohr, Frobenius and Scheibert which appeared after 1871, and cites three outstanding examples of siege warfare: Strassburg, Charleville, Montmedy.

MACHINE-GUN AND CARRIAGE EMPLACEMENTS FOR THE 1934 MODEL.
[Feldstellungsbau für MG. 34 und MG.- Lafette 34.] Lieutenant Menzel

This article includes three sketches.

MILITARY COOPERATION IN SCANDINAVIA?
[Militärische Zusammenarbeit in Skandinavien?]

RUSSIAN INFANTRY.
[Russische Infanterie.] Captain Fritzsche

In the attack the infantry is organized in four groups:

(1) The "shock group," consisting of two-thirds of the force employed, for leading the main thrust.
(2) The "shackling group," a containing force charged with mission of holding the enemy and diverting his attention from the shock group.
(3) The "Reserve," for unforeseen occasions, a ninth of the force.
(4) The "fire groups," consisting of infantry, artillery and heavy machine guns.

TANNENBERG.
[Truppen-Kriegsgeschichte: Tannenberg.] (I)

13 January 1939

WE NEED TROOPS FOR THE EAST.
[Wir brauchen Osttruppen.] Captain Schoeneich

This article is a plea for troops to be garrisoned in Germany's newly acquired eastern territory. The idea is to develop organizations that will become familiar with this territory, its climatic conditions requiring difficult operations in ice and snow.

OFFICER AND STORM TROOP LEADER.
[Offizier und SU-Führer.] Lieut. General Schmidt-Logan

The two great organizations, the army and the Storm Troops, each in its own sphere under instructions from the common superior, each complementing the other, contribute to the armed force of the German people. Their officers, exercising different ways and means, must understand each other.

WORLD-WIDE THOUGHTS ON MOTORIZATION.
["Motorisierte" Gedankensplitter aus aller Welt.] Lieut. Colonel Braun

Artillery requires its own aircraft for fire control. Tank attacks should be accompanied by bombing.

The new Italian auto railway, the discovery of the Italian engineer, Caetano Ciocca, is worthy of notice, especially on account of its military application. The tracks consist of two concrete strips of highway, separated in the center by a long concrete block which guides the vehicles on its path without steering. It serves only organized traffic and is kept under a centralized control. Vehicles can be organized in trains and sent to their destination without detailed instructions to the drivers. Such highways leading from the home stations to the motor parks of the army near the front will play a new role in the service of supply. It is significant that such a system might be adopted in convoying troops and supplies to a Maginot Line, or the line of Rhine fortifications.

AGAIN "MANEUVER TACTICS."
[Nochmals "Manövertaktik."]

Excessive concentrations — always wrong. Weigh before waging.

THE SIGNIFICANCE OF AIRCRAFT FOR FRANCE'S COLONIAL EMPIRE.
[Die Bedeutung der Luftwaffe für das französische Kolonialreich.]

TANNENBERG.
[Truppen-Kriegsgeschichte: Tannenberg.] (II)

20 January 1939

UNITY OF COMMAND.
[Einheitlicher Oberbefehl.] General Wetzell

Gisbert Beyerhaus, Professor of History, University of Breslau, has presented an especially interesting problem of the World War in his book "Unity of Command." Again, a non-military expert has given us a real worth-while study of his observations on an interesting problem of the World War, from the viewpoint of the Central Powers as well as that of the Allies. We can only agree with his concluding decision: "In a coalition there cannot be two or three strategies. In great crises their general staffs cannot be opposed to each other," and in the remark of Foch, which he quotes: "Unity of command has no miraculous powers. It cannot be converted into a fetish that, owing to its miraculous powers, will transform today's probable defeat into tomorrow's victory."

FRENCH ARMY COMMAND AT THE BEGINNING OF THE WAR, 1914.
[Die französische Heerführung bei Kriegsbeginn 1914.]

FIGHTING OUTPOSTS.
[Gefechtsvorposten.] Lieut. Colonel Weckmann

Every combat unit would like to be assured that its security lies in the hands of its own security detachments. No matter how effective others might

be it has greater faith in its own. Its own patrols will keep it informed just what is going on up front. In their manner of fighting they will be influenced by the unit under which they are operating. As long as the fighting outposts continue to hold there is little chance that the means of communication will break down. If placed in echelon their control from the rear becomes easier and, even though they withdraw, the distance between them and the rearward units is lessened.

WHY SPECIAL CLOTHING AND EQUIPMENT FOR TROOPS OPERATING IN EASTERN TERRITORY?
[Weshalb besondere Bekleidung und Ausrüstung für die Osttruppen?] Captain Schoeneich

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THOUGHTS ON THE STUDY OF MILITARY HISTORY.
[Gedanken zum kriegsgeschichtlichen Studium.]

A necessary adjunct to the educational improvement, which every officer owes to himself, in his occupation with the study of military history.

THE CAUSES OF THE FAILURES OF THE CHINESE ARMY.
[Die Ursachen der Misserfolge der chinesischen Armee.]

27 January 1939

RECENT TYPES OF BATTLESHIPS.
[Neuzeitliche Kriegsschifftypen.] Vice Admiral Meurer

Motor torpedo boats.

FIRE POWER. THE INFANTRY POINT OF VIEW OF THE PROBLEM OF THE ATTACK.
[Das Feuer. Infanteristisches über das "Problem" des Angriffs.]

It is not believed that in future wars the rule will be "to battle for the last 300 yards." Since 1914 that was not even the case. The turning point, by that is meant the instant the hostile power of resistance is observed to falter or break down, will and must come before that. Otherwise there would be no reason for having increased the number, range and repelling force of practically all weapons to such an extent.

ORGANIC ANTITANK WEAPONS OR INDEPENDENT ANTITANK UNITS?
[Organische Panzer-Abwehrwaffen oder selbständige Panzer-Abwehrverbände?] Captain Pfeiffer

There is recommended a new weapon that must possess the following characteristics:

(1) Light in weight, fully automatic.
(2) Caliber as small as possible.
(3) It must be practicable to transport a reasonable amount of ammunition with the weapon.
(4) A maximum crew of three men.
(5) A weapon for every rifle platoon.
(6) Its target should be similar to that engaged by the average machine gun.

CONCERNING THE NECESSITY OF MANUALS FOR TROOPS.
[Uber die Notwendigkeit von "Handbüchern" für die Truppe.] Lieut. General Marx

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THE GREAT BELGIAN MANEUVER IN THE ARDENNES.
[Das grosse belgische Ardennenmanöver.]

THE COMMON INTERESTS OF FRANCE AND ENGLAND.
[Englands und Frankreichs gemeinsame Interessen.] Captain Ruprecht

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MAP PROBLEM NO. 7: NEUBERG.
[Truppenführung: Aufgabe 7 (Neuburg).]

The battalion in the counterattack. The situation.

3 February 1939

COMMANDING PIONEERS IN COMBAT.
[Führung der Pioniere auf dem Gefechtsfelde.] Colonel v.Schaewen

(1) Pioneers are broken up into separate units and attached to troop commanders.

(2) Pioneers have special missions, but are definitely assigned to other troop units in order to cooperate with them.

(3) Should the occasion arise they are employed on special missions as a self-trained unit, as a "reinforced pioneer battalion," reinforced with antitank detachments and motorcycle riflemen.

TANKS AND ANTITANK DEFENSE AT NIGHT.
[Panzer und Panzerabwehr bei Nacht.] Dr. Brandt

NO WOE-BEGOTTEN CHILD.
[Kein Schmerzenskind.] Major Klapp

A reply to the article which appeared in the number of 6 January 1939.

THE NEW REGULATION FOR THE ADMINISTRATION OF WEAPONS AND EQUIPMENT ISSUED TO TROOPS.
[Die neue Vorschrift für das Verwalten der Waffen und des Geräts bei der Truppe (H. Dv. 488).] Colonel Ihssen

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NEW ORGANIZATION OF THE BRITISH TERRITORIAL ARMY.
[Neuorganisation der britischen Territorialarmee.]

The present 14 divisions (Haldane Plan) will be reorganized into 18 new divisions. Of these 5 will be antiaircraft divisions, and of the remaining 13, there will be one mobile division, 9 normal infantry divisions and 3 light infantry divisions.

THE SWISS ARMY FROM THE ITALIAN VIEWPOINT.
[Das Schweizer Heer mit italienischen Augen gesehen.] Lieutenant Himpe

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MILITARY HISTORY FOR TROOPS. INITIATIVE OF A SUBORDINATE LEADER PLACED ON HIS OWN RESPONSIBILITY. HILL 208.
[Truppen-Kriegsgeschichte. Selbsttätigkeit auf sich allein gestellter Unterführer. Höhe 208.] Conrad Leppa

A story of the fight on the Isonzo.

MAP PROBLEM NO. 7: NEUBURG.
[Truppenführung: Aufgabe 7 [Neuburg).

The battalion in the counterattack. The solution.

10 February 1939

THE CRISIS AND TURNING POINT IN SUBMARINE WARFARE DURING THE WORLD WAR.
[Kriegskrise und Kriegswende im Ubootskrieg.] (I) Vice Admiral Groos

The British attitude on this subject is expressed in the recent words of General Fuller. It is his opinion that the World War was far more a tussle between the Ruhr district and the English industrial centers, between the foodstuff sources of the Central Powers and those of the Allies, than a battle between the opposing armies and navies. The most effective operations were those performed by the British blockade and the German submarine warfare. We have it again in the warning of Admiral Jellicoe. Published in 1934, his book, "The Submarine Warfare, England's Hour of Trial," cautioned England against a repetition of a similar dreadful situation.

The situation was becoming desperate. England's plan to turn Germany's northern flank and seize her submarine bases had to be postponed, as her land offensive bogged down in the Flanders' mud. Later in April, 1918, she attempted to blockade Zeebrugge, but failed. Meanwhile the war of the submarines had reached its crisis. Losses in world shipping steadily increased from 532,000 tons in February to 599,000 in March and to 869,000 in April. England now went over to the convoy system, making her trips in convoys of ten to twenty and finally thirty ships. These convoys were escorted by cruisers and auxiliary cruisers. While passing through the submarine zones the escort was taken over by a great number of destroyers, fishing boats, and aircraft. Even though America assisted in supplying ships for escort purposes, the great number of vessels required for an effective escort was so large that it placed a tremendous strain on the British navy.

The following figures are furnished by Admiral Jellicoe: Up to October 1917, about 99 convoys, consisting of 1502 steamers, were operated. Of these only ten were sunk. The total number of Atlantic convoys from the summer of 1917 to November 1918, was 596 put to sea and 521 arrived at destination, entailing a loss of less than one per cent.

FUNDAMENTALS OF THE INFANTRY ATTACK.
[Grundsätzliches zum Problem des Infanterieangriffs.] Captain Meier-Welcker

The constant primary mission of the infantry is to gain contact with the hostile force and break down its resistance by close-in fighting. Before and during the attack the offensive force, by means of fire, attempts to weaken the resistance of the defensive force and to neutralize it while the attack is in progress. The defensive force must then lay down a zone of fire between itself and the offensive in order to cause the attacking force to become destroyed in this zone of fire.

In recent wars the effect of the defensive fire has increased tremendously. To offset this the offensive has been forced to devise a number of measures designed to weaken the effect of the defensive fire:

(1) By laying down a powerful artillery concentration on the defensive, in order to reduce its strength prior to the attack and destroy the remainder during the attack, permitting the infantry to penetrate the hostile zone of fire without perishing in it.

(2) By utilizing armored protection in the form of tanks, rendering the hostile infantry fire ineffective and permitting the "armored soldier" to close in for the decisive combat.

(3) By taking advantage of cover and camouflage and advancing in deployed formations.

Neither artillery nor tanks can create conditions which alone will be sufficient to overcome the hostile resistance. Their fires must invariably be supplemented by that of the attacking infantry in order that fire superiority might be gained and the attack advanced. As late as 1914 fire action was conducted by the infantry alone. A change, however, was brought about by the introduction of, and the rapid increase in, heavy infantry weapons, and the construction of strong field fortifications. A distinction arose between "fire power" and "striking power," although a clear distinction between the two has never existed. In the final analysis of several interpretations the term "striking power" came to mean that power which is produced only by the rifleman with his bayonet. At the present time, however, striking power is interpreted as "fire power at close range." In the zone of action of the infantry, the striking power is produced mainly by the rifle companies, but the rifle companies also include heavy infantry weapons, forming the link which connects the rifle companies with those units composed entirely of heavy infantry weapons. We must consider the infantry as an organic unit, whose common mission in the offensive is "to carry the strongest possible fire power within the enemy's lines."

Individual rifle squads, supported by the fire of artillery and the heavy weapons of the infantry and taking advantage of all available cover, advance on the hostile line until within effective range. If the enemy is entrenched this range must be very close. As he will employ his light weapons only at medium and close ranges, it will not be possible to recognize targets until relatively late. The riflemen must prevent the enemy from forcing them to open fire before they have arrived within effective range.

It is no longer the case in modern warfare to engage in a long fire fight to gain fire superiority. Neither the rifle, nor the automatic rifle, nor the light machine gun is a weapon powerful enough to silence an entrenched enemy at a range of several hundred yards.

As cover against the hostile fire is of primary importance, the modern attack as a rule can be executed only in great depth. The casualties will be greatest if the advance is made from firing position to firing position. Once firing is opened the position is exposed. If the conformation of the ground is not favorable to the advance, the infantry must depend upon the reinforced employment of artillery and heavy weapons or by increasing the rate of fire. Under certain conditions tanks and aircraft may be used. If the ground does not offer the necessary cover advantage may be taken of fog and darkness. Even combat at night may be necessary. The latter offers great chances of success, if the troops have been thoroughly trained in this method of combat and have confidence in their own strength.

Finally, the attack may be confined to limited objectives at some points, while other more favorable parts may be exploited and a decision gained.

Hence it follows that the infantry in the attack must exploit its characteristics and make full use of its weapons. Not until it penetrates the hostile defensive and fights within the enemy's lines does it gain the complete effect of its striking power. The path is now cleared for the action of the shock troops. The light machine gun will usually form the attacking wedge and all other weapons of the striking power, such as the automatic pistol, automatic rifle, hand grenade and flame thrower will now be able to perform their most important functions.

The striking power must also be brought to bear against the hostile reserves and exploit the initial gains by carrying the fight deep into the hostile position. Here the shock troops do not have the full support of their heavy weapons and the artillery. Every single cartridge saved during the initial phase is now doubly precious.

A concerted effort must be made to enable the infantry to close with the enemy without suffering heavy losses. Only then will it be possible to realize the effect of men of superior caliber, the excellence of their training and the improved quality of their weapons.

17 February 1939

PORTRAYING THE MODERN GENERAL.
[Das Bild des modernen Feldherrn.] General Wetzell

There has recently appeared a worth-while book under the title "Army Commanders of the World War" [Heerführer des Weltkrieges] by the German Society for the Dissemination of Military Policies and Military Sciences. In addition to many pictorial illustrations, its presentation of the matter permits the reader to draw his own conclusions.

I am obliged, however, to take certain exceptions. The book leads us to believe that it was the opinion of Field Marshal Haig not to commit the English Expeditionary Force until late in the Fall, after it had been reinforced as much as possible. Actually it was 23 August 1914 that the English Expeditionary Force came to the rescue of the French Fifth Army (Lanrezac) on the Sambre and the Maas. The latter was in a desperate situation and the rescue probably had a decisive effect. Do not forget that it was the English Expeditionary Force, in its penetration of the Marne gap between the German First and Second Armies, 5-9 September 1914, that rendered a significant contribution and, that without their support, it would have been practically impossible for Joffre to have accomplished his counteroffensive.

In the introduction Lieutenant Colonel Foerster draws the conclusion that the era of modern generalship and field strategy had its inception in the character of Napoleon, that this era was fostered by a "technical revolution" and, that with the retirement of Napoleon a recession had set in. In my opinion there was only one "technical revolution" and that resulted from the discovery of gunpowder. This effected a complete revolution in the materials and conduct of war, a revolution that was "gradual" and not "stormy." It is noticeable that Field Marshal Moltke, who rightfully occupies the foreground of Foerster's observations, never once speaks of a "technical revolution." With respect to Napoleon, I am in accord with the opinions of the greatest military philosophers, Clausewitz, Moltke, Schlieffen, Goltz, Freytag-Loringhoven, and others, that "modern generalship" did not begin with Napoleon, but was revived by him. It was released by the great French summons to its people (universal military service), that forced upon them the necessity for great military organization. Battle tactics were subjected to a complete change from that of the style of Frederick. Napoleon introduced strong, independent cavalry units (division, corps) that operated far to the front, and massed his artillery. Up to 1870 the employment of cavalry in battle had not changed greatly from the method used by Frederick the Great. Its ingenious use in pursuit by Napoleon attained a degree which is still to be duplicated.

The opinions of the great military philosophers may be summed up as follows: Napoleon gave to the world its first real concept of war. For that reason he will always bear the illustrious title of the creator of modern warfare on the grand scale. To these opinions we may add that Moltke was the perfector of the Napoleonic strategy with respect to his method of command of the nation's forces, organized in separate, independent armies.

Field Marshal Count Moltke, the greatest German general of modern times, had no particular preference for any special type of operation. In the exercise of command he was not confined to the influence of any particular theory. Ludendorff resembles him in this respect. I agree thoroughly with Field Marshal von der Goltz, that it was Moltke more than anyone else, who, in the reality of war, disregarded the theoretical principles advocated by him in time of peace. The ingenious master of strategy possessed the inherent faculty of applying himself to the enemy situation at hand and carrying his decisions into execution with unusual perseverence. In doing this he is always present personally where he should be, not "far to the rear at his writing table," but well forward with the army at a place opportunely selected where the fate of the battle is about to be decided.

MOBILE UNITS.
[Schnelle Verbände.]

Except in Poland and Soviet Russia, all armies have suffered a deep decrease in cavalry. In some cases one might say cavalry is about to die out. But the missions of cavalry have remained, and always will remain. For the solution of the problems which these missions entail, other "mobile units" have been devised, motorized and mechanized units, in acknowledgment of the fact that, for their solution, every army must set aside a definite portion of its force as mobile units, including cavalry.

The missions of mobile units:

1. When a decision is to be reached:
   In the offensive: Attack against the hostile flanks and rear.
   Attack to effect the penetration.
   Pursuit.
2. During the progress of operations:
   Reconnaissance.
   Masking effect: Offensive
   Defensive
   Security: Providing security for important ground beyond the front.
   Filling a gap.
   Flank protection.
   Forcing the enemy to extend his flanks.
   Covering the withdrawal.
   Special missions: Diverting the attention of the enemy by appearing in unexpected localities.
   Occupying important military features in front of the enemy.
   Raiding the hostile lines of communication.

THE CRISIS AND TURNING POINT IN SUBMARINE WARFARE DURING THE WORLD WAR.
[Kriegskrise und Kriegswende im Ubootskrieg.] (II) Vice Admiral Groos

Admiral Jellicoe continues his discussion of the tremendous drain upon the British Navy necessitated by the convoy system. Following the refusal of the German terms of peace, neither the army, nor the navy, nor the Government could name any means of terminating the war without crushing defeat other than that of unrestricted submarine warfare. The evaluation of the significance of sea power, opportunely and appropriately made, was a deciding factor in determining the ultimate victory. Even though the submarine warfare fell short of its goal, it brought England, as Creswell in his recent book stated, "assuredly closer to defeat than she had ever been at any time during the past century."

SOMETHING ABOUT THE DEFENSE OF DEFILES.
[Etwas vom Offenhalten von Engen.] Lieut. Colonel Weckmann

In German Field Service Regulations there is little about the defense of defiles. With respect to the advance or an attack against a defile, nothing is mentioned about its defense. Now actually in the advance there can be no doubt as to the importance of defending a defile. We are informed by Field Service Regulations that, in advancing on a defile, the party who reaches it first has the advantage. "Not until the troops have the defile behind them, will they be able to exercise freedom of mobility." Consequently there will arise a competition between the opposing forces for the possession of the defile, it being the intention of the attacking party (often both parties) to reserve it for the use of succeeding elements, of the defending party to block it.

The mission of the defense of a defile undoubtedly contemplates the defensive. The methods to be employed differ with the situation. If the enemy is still at some distance, it might be advisable to advance on him and fight a delaying action while withdrawing to the defile in successive stages. This method might be favored if a strong, mobile force is available for the defense of the defile.

It will often happen that troops in front of the defile will have to be charged with its defense. In this case our own forces are either too weak to provide a sufficient number, or else the troops in front of the defile have already become involved in a fight with the enemy for its possession.

TRAINING DURING TIME OF WAR.
[Die Ausbildung im Kriege.]

He, who in April 1915, eight months after the beginning of the war, became a soldier, experienced in his infantry training the following: Above all was the drilling. Day after day and week after week he stood on the garrison parade or the drill field and practised the manual of arms, movements, school of the soldier, loading and locking; in short, every training exercise.

In the next war we shall probably be obliged to subject our training to much rapid and new learning. During wartime we expect our training to speed up the absorption of the latest experiences of the war. Even after one month's training at the home locality, the recruit must have had these experiences throughly stressed, otherwise he will again be going into battle with the wrong training.

How is that to be attained? The following offers some possibilities:

(1) Immediate incorporation in the training of the reports of the experiences of the troops concerning the effect of the enemy offensive and his weapons.
(2) Prompt exchange of training instructions between the front and the replacement centers.
(3) Shifting the training area from the home locality to an area behind the front.
(4) Utilizing wounded and convalescent personnel in training replacements.
(5) In a prolonged war no instructor should be permitted to remain in the replacement center, if he has not been at the front.

THE COMMUNICATIONS SECTION OF THE REGIMENT IN THE NEW ORGANIZATION.
[Der Regiments-Nachrichtenzug in neuer Gliederung.]

Tactical employment, training, equipment, vehicles and horses, increased number of horses, equitation, increased need of stable personnel.

THE YUGOSLAVIAN ARMY.
[Die jugoslawische Wehrmacht.]
(See "Military News Around the World.")

MILITARY ENGINEER

September-October 1939

THE DEMOCRACIES PREPARE FOR WAR. "PAGING A PRODUCTION SPECIALIST." Lieut. Commander Harrison, Naval Reserve
CONCEALMENT OF MOTOR VEHICLES. Lieutenant Arnold
THE COST OF UNPREPAREDNESS. Captain Barth
THE EXPANSION OF THE BRITISH ARMY. Major Reynolds, Retired
STRATEGIC MINERAL SUPPLIES. STRAWS IN THE WIND. Major Roush

MILITARY SURGEON

October 1939

THE ROLE OF AVIATION MEDICINE IN THE DEVELOPMENT OF AVIATION. Colonel Tuttle, and Captain Armstrong
THE MEDICAL ASPECTS OF ENGLAND'S PREPARATION FOR AIR ATTACKS. Lieutenant Friend

November 1939

NOTES ON FIELD TRAINING OF MEDICAL DEPARTMENT UNITS OF THE NATIONAL GUARD. Colonel Carter
THE MEDICAL MAN AND NATIONAL DEFENSE. (Editorial)

NAVAL INSTITUTE PROCEEDINGS

August 1939

FISHER AND HIS WARSHIPS. Lieutenant Percival

September 1939

THE TIRPITZ TECHNIQUE. Lieutenant Percival
THREE MODERN NAVAL MUTINIES. Lieut. Commander Hayes

October 1939

POLICY AND THE NAVAL OFFICER. Commander Taylor
"DAMN THE TORPEDOES . . . ?" Lieut. Colonel Bovey

DIE PANZERTRUPPE (Germany)
(Formerly, "Die Kraftfahrkampftruppe")
BY MAJOR WM. H. SPEIDEL, Infantry

May 1939

"AND" OR "OR."
["Und" oder "Oder."] General v.Poseck

An article which attempts to reconcile both motor and horse enthusiasts.

MOVEMENT ALERTNESS.
[Marschbereitschaft.]

An organization's condition of readiness depends basically on:

(1) The degree of functional perfection of its weapons and accessories.
(2) The thoroughness of a knowledge of its weapons and their accessories.
(3) The time space between the beginning of the preparation for departure and the completion of the alerting.
(4) Dependability of supply.

Their degree of thoroughness is the criterion of the success of the tactical mission. In this age of motorization and mechanization these requirements involve difficult operations which, in order to be carried out successfully, necessitate the formation of carefully developed plans and constant training in putting these plans into effect. The weapons of former times gave little difficulty. Even though there were some improvements the weapons on the whole remained quite similar. With mechanized troops, however, this is not the case; here the truck is the weapon, or at least an essential part thereof, and it is still quite new and complicated, difficult to understand and control.

Well defined and carefully prepared plans for keeping motor vehicles in serviceable condition must be devised. Responsibility for maintenance must be assigned definitely. Defects must be repaired immediately by the driver or, if beyond the scope of their capacities, reported to the proper maintenance echelon.

ANTITANK COMBAT RANGES.
[Schiessbahnen für Gefechtsschiessen mit Pak.] Colonel Deindl

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THE RADIO EXPERT IN THE MECHANIZED COMPANY.
[Der funkmeister in der Panzerkompanie.]

MOTORIZED TROOPS AT THE FALL MANEUVERS, 1938.
[Motorisierte Truppen bei den Herbstübungen 1938.]

THE MECHANIZED MOVEMENT TO PRAGUE.
[Panzer — Marschrichtung Prag.]

June 1939

THE EMPLOYMENT OF MECHANIZED FORCES.
[Panzerverwendung.] Captain Pfeiffer

With the development of antitank weapons their conscious effect on armor created an attitude of indifference toward the use of tanks and similar weapons. These weapons are valuable assets in support of the infantry. The solution of their problems is one of tactics. They are best adapted to wide envelopments or penetrations of weakly held positions in the line. It is perhaps significant that tanks and similar weapons should employ indirect means to support the infantry, permitting flame throwers, rifle grenades, smoke, automatic weapons, etc., the more direct means.

THE EMPLOYMENT OF ANTITANK DEFENSE.
[Zum Einsatz der Panzerabwehr.] Captain Mendrecyk

Should positions be selected with reference to the front or flanks? If the flank position has been correctly selected, it usually is superior to any frontal selection.

TANKS OF THE SOVIET UNION.
[Die Panzerkraftwagen der Sowjet-Union.] (I)

This is a well illustrated article presenting a short history of the development of the tank in Russia, from early experiments in 1915 to the present day, at which time they are believed to have: 4,000 light tanks; 1,000 medium tanks; 300 heavy tanks.

THE ROLE OF MOTOR TRANSPORTATION IN THE SUPPLY OF EUROPEAN TROOPS IN THE THEATERS OF OPERATION BEYOND THE CONTINENT.
[Das Kraftfahrzeug im Rahmen der Versorgung europäischer Truppen auf aussereuropäischen Kriegsschauplätzen.] (I) W. Paschasius

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A FORCED MARCH IN WINTER BY A MECHANIZED DIVISION.
[Wintergewaltmarsch einer Panzer-Division.]

July 1939

DOES NIGHT SERVE TO PROTECT TANK TROOPS?
[Die Nacht der Gehilfe des Panzermannes?] Lieutenant Hofmann

Lieutenant Hofmann is convinced that night operations, in spite of the difficulties presented, are advantageous to effective tank employment. Anti-tank weapons lose the effect of camouflage and disclose their positions by fire. Tank drivers become proficient in night-driving. The noise is heard, but the tank remains unseen and is upon the enemy before he realizes it.

TANKS OF THE SOVIET UNION.
[Die Panzerkraftwagen der Sowjet-Union.] (II)

This article concludes the historical sketch presented in the June number. The limitations and characteristics of the present-day tanks of the Red Army are given in tabulated form under Military News — Russia.

THE ROLE OF MOTOR TRANSPORTATION IN THE SUPPLY OF EUROPEAN TROOPS IN THE THEATERS OF OPERATION BEYOND THE CONTINENT.
[Das Kraftfahrzeug im Rahmen der Versorgung europäischer Truppen auf aussereuropäischen Kreigsschauplätzen.] (II) W. Paschasius

This article concludes the subject. It makes a generous use of maps and illustrations in presenting transport activities along the Asiatic Turkish front.

BAPTISM BY FIRE OF GERMAN TANK TROOPS BEFORE MADRID.
[Feuertaufe deutscher Panzermänner vor Madrid.] Captain Wolf

PIONIERE (Germany)

BY MAJOR WM. H. SPEIDEL, Infantry

May 1939

PRACTICAL SUGGESTIONS ON MILITARY OPERATIONS FOR ENGINEERS.
[Winke für Anlage und Durchführung kriegsmässiger Übungen der Pioniere.] Lieut. General Sachs

Assume that our forces are engaged in the attack. A portion of this force has crossed the river and become engaged with the enemy about five or six miles beyond. Reinforcements are to follow, so the division orders the construction of a bridge by the engineers in order to facilitate the crossing, and specifies the time when it must be completed. Work is begun on the approaches, and an officer with some empty engineer wagons moves into place to represent the head of the column.

When work on the bridge has progressed sufficiently, some of the leading troops are sent across. Just at this time a motor-boat with burning smoke candles arrives. This simulates a threat to set the bridge on fire, a test to see if proper precautions have been taken. After this situation has been solved the engineer commander is ordered to detail one pioneer company to furnish security for the forward elements. How to procure these troops is the problem of the engineer commander. He will probably have to take them from the personnel engaged in the construction of the bridge.

An aerial attack takes place and the bridge is struck by a shell. At this very moment communication with the division is broken. The engineer commander decides to dismantle the bridge and reconstruct it at some safe distance away. He issues orders to this effect, but before the alternate bridge is completed there is a gas alarm, and the remainder of the work on the new bridge has to be accomplished while wearing gas masks. Some men are designated as gas casualties and provisions have to be made for their evacuation. Finally there arrives an order from the division that the bridge must be strengthened in order to permit the crossing of a mechanized regiment, in which there are loads up to eighteen tons. This force is expected to arrive in six hours.

General Sachs suggests some additional problems, all of which are not carried out in practice but worked out on paper. He recommends one umpire with each company and an assistant umpire with each section.

THE USE OF WEAK BRIDGES FOR HEAVY LOADS.
[Ausnutzung schwacher Brücken für schwere Lasten.] Captain Bujard

This article furnishes some valuable information and charts that may be used to good advantage by officers responsible for the transport of heavy motor columns, confronted with the problem of crossing bridges the capacity of which are known to be less than the total weight of individual vehicles.

MODERN ORGANIZATION AND EQUIPMENT OF ENGINEERS IN THE ENGLISH DIVISION.
[Neuzeitliche Gliederung und Ausstattung der englischen Divisions-Pioniere.] Captain Koller-Kraus

Fourteen illustrations and a pictorial chart are used to supplement the description of the English Royal Engineer Field Company and an Engineer Park Company.

A STUDY OF THE USE OF MINES IN THE CONDUCT OF WAR.
[Allgemeines über den Minenkrieg.] By a Sapping Expert, formerly an officer in the one-time Austro-Hungarian Army

This is a comprehensive study in which the officer makes a free use of sketches and illustrations in order to develop his subject. It covers the following points: The crater-producing effects of mines; subterranean opertions; gas effect; effect on morale; the mine in combat under conditions resulting from modern types of fortification; the relation of the effect of mines to the tactical commander; subterranean reconnaissance and exploitation; security; mine combat; loading and tamping the charge; mine tactics; mine personnel; and materials of construction.

THE EXPLOITATION OF ERUPTIVE LAYERS.
[Eruptivdecken als Stellungsschutz.] Professor Scupin

The exploitation of the sub-terrain. The strategical application of geological formations. Eruptive layers often extend over large areas. Sometimes a soft layer is sandwiched between two such layers and, if the outcroping is within our own ground with the dip in the direction of the enemy, it will lend itself to favorable mining purposes, while the enemy is handicapped in his efforts to countermine.

THE EMPLOYMENT OF TRAPS BY THE ARABS IN PALESTINE.
[Anwendung versteckter Ladungen seitens der Araber in Palästina.] By Captain Bessell

An abstract of "An Arab 'Mouse-Trap' and other Booby-Traps, Palestine, 1936," which appeared in "The Royal Engineers Journal," December 1937.

THE BATTLE ON THE KOPRATAS, 317 B.C.
[Das Gefecht am Kopratas 317 v. Chr.] Major Günther

An account of an attempted river crossing during the Diadochian wars. The general principles of this type of operations have remained unchanged. After the death of Alexander in 323 B.C., Perdikkas and Antipatros attempted to preserve the units of the state. Following their death, 321 and 319 B.C., respectively, Antigonus undertook the weary task. While conducting a campaign against the Greek leader, Eumenes, the two armies faced each other on the opposite banks of the Kopratas River which, at the point of operations, was about 100 yards wide and not very deep. On account of the swiftness of the current, however, it was quite unfordable. Antigonus make a flank march in an attempt to surprise the enemy, but failed due to an inadequate supply of boats and the superior intelligence operations of Eumenes which enabled him to oppose the crossing with a superior force.

THE ENGINEER MUSEUM IN KLOSTERNEUBURG.
[Das Pioniermuseum in Klosterneuburg.] Lieut. Colonel von Schmidt

This article contains a number of illustrations of models on exhibition in this museum.

QUARTERMASTER REVIEW

September-October 1939

POLAND AND PARTITION
INDUSTRIAL MOBILIZATION. Major Price
OUR NEW SERVICE RIFLE. Lieutenant Nohrden
THE QUARTERMASTER PROBLEM

RASSEGNA DI CULTURA MILITARE (Italy)

BY LIEUTENANT COLONEL E. M. BENITEZ, Coast Artillery Corps

April 1939

THE OFFENSIVE COMBAT IN THE ITALIAN AND GERMAN REGULATIONS.
[Il combattimento offensivo nella regolamentazione italiana ed in quella tedesca.] (I) Brigadier General Scala

Circular No. 9,000, dated 28 October 1938, which appears in condensed form on page 44 of the Command and General Staff School Military Review, September 1939, is the Directive outlining the Tactical Doctrines of the Italian Army. The new division is the basic large combat unit intended for use either for shock or penetration, normally used as part of the corps. The German division, however, being larger, still maintains the characteristics of a unit that can be used in independent action.

CLAUSEWITZ AND THE THEORY OF WAR.
[Clausewitz e la teoria della guerra.] (II) Colonel Canevari

In the theoretical and absolute form of war, aiming at the complete overthrow of the enemy, the military purpose is to reduce the enemy to impotence. To this end, it is necessary to destroy his military forces, occupy his country and overcome his will to resist.

The conduct of war may, according to circumstances, adopt three forms:

(1) The absolute offensive, seeking the destruction of the enemy.
(2) The offensive with limited objective, seeking territorial advantages or a victory which will shake the morale of the enemy and incline him to peace.

(3) The defensive, which, according to circumstances, may aim at the destruction of the enemy or merely seek to wear him down and compel him to make peace.

In every case, the decision is won by giving battle, and the battles may be, according to circumstances, either offensive or defensive. The destruction of the enemy's forces is the ultimate aim of combat, and in itself the most effective means of action.

Clausewitz considers the following types of battles:

(1) Offensive battle, preferably by flank attack (Custozza 1866, Tannenberg 1914).
(2) Counteroffensive battle (Morhange 1914, second Marne 1918).
(3) Defensive battle (Piave 1918).
(4) Withdrawal with step-by-step resistance until the attacker has passed the culminating point, then offensive battle (Marne 1914).

All these types represent strategic defensives of various kinds.

It might be said that the essence of the art of war lies in the alternate use of the offensive and the defensive, thus securing in turn the advantages of the two forms of war and avoiding their disadvantages.

KEMAL ATATURK.
[Kemel Ataturk soldato e statista della nuova Turchia.] Major Tosti

A sketch of the life of this great Turkish soldier and statesman of the new Turkey who died a few months ago at the age of 57.

ORGANIZATION OF BUILDINGS IN MODERN WAR.
[Organizzazione dei caseggiati nella guerra moderna.] (I) Major Memmo

The World War and particularly the Spanish Civil War and the Sino-Japanese War have confirmed the important part played by buildings in the defensive.

The author classifies buildings under three headings as follows:

(a) Rural buildings
(b) Suburban buildings
(c) City buildings.

Rural buildings do not lend themselves readily to a defensive system and they play, therefore, a secondary part.

Suburban buildings lend themselves to a concerted plan of defense in which wire entanglements play a minor part.

City buildings can be organized into defensive blocks, capable of putting up a stubborn defense which can only be overcome at the cost of heavy losses.

THE EMPLOYMENT OF OXY-ACETYLENE WELDERS FOR AUTOMOBILE REPAIRS.
[L'impiego della saldatura ossiacetilenica nella riparazione del materiale automobilistico.] Captain Belluzzi

Oxy-acetylene welding, contrary to the common belief, is an operation which requires skill. The proper selection of a weld metal is of great importance. Special welds are required for soft steel, chromium, nickel-steel and other metals; for bronze, a bronze containing a large percentage of tin is necessary, while for aluminum, a pure aluminum must be used.

May 1939

THE ECONOMIC RESOURCES OF THE EASTERN MEDITERRANEAN COUNTRIES.
[Le risorse economiche dei paesi mediterranei.] (I) General Deambrosis

The Eastern Mediterranean countries bordering the Black Sea and the Caspian Sea have a total population of 120 million. They have, according to the writer, sufficient resources to support a population of 400 million.

KING CARLO ALBERTO AND THE SARDINIAN HORSE.
[Re Carlo Alberto ed il cavallo sardo.] General Giubbilei

The Island of Sardinia, with its hilly terrain and poor system of communication, has always appreciated the value of the horse.

Phillip II of Spain sent to Sardinia the best stallions of Andalusia and the Italian kings have always tried to improve the breed.

THE OFFENSIVE COMBAT IN THE ITALIAN AND GERMAN REGULATIONS.
[Il combattimento offensivo nello regolamentazione italiana ed in quella tedesca.] (II) Brigadier General Scala

The author discusses the modern offensive doctrines of the Italian and German armies and finds that as a whole there is little difference between them.

THE NEW BALANCE IN CENTRAL EUROPE.
[Il nuovo assestamento dell'Europa centrale.] (I)

A resumé of the most important events in Czechoslovakia after the Munich Agreement. On 15 March, Hitler issued a proclamation declaring that Czechoslovakia had ceased to exist.

ORGANIZATION OF BUILDINGS IN MODERN WAR.
[Organizzazione dei caseggiati nella guerra moderna.] (II) Major Memmo

Buildings must not be used for passive defense only, but they should be used as starting points for a counteroffensive. They are particularly well suited for defense, but are of little value for offensive action. Hence, an enemy who contents himself with a passive occupation of them, gains little advantage by doing so.

June 1939

THE RUSSIAN STRATEGIC PROBLEM IN THE WORLD WAR.
[Studi di strategia sulla guerra mondiale.] General Pietro Ago

Russia entered the World War in 1914 poorly prepared. The consequences of the disastrous Russo-Japanese War still weighed heavily upon the army and the nation. The internal situation — both political and economic — was unsettled while the mentality of the masses was at its lowest ebb.

The army was poorly equipped, there being arms for only about one-third of the men. Having 25 million men available, Russia could only arm about 8 million, or less than Germany. The railway net was insufficient and the matériel was in a deplorable condition.

The eastern theater of operations had characteristics different from the Western Front. Russia's plan was to invade the two salients that threatened her eastern front — East Prussia and Galicia — and then to advance upon Berlin and Vienna.

France also used the wrong strategy by directing her main effort against Germany and at her repeated requests, Russia massed against Prussia 2 strong armies of 9 corps, plus 11 infantry divisions in reserve and almost 10 cavalry divisions, or almost one-third of the total Russian army.

Had the Allies directed their coordinated efforts against Austria first, this nation would have been defeated early in the war, Bulgaria would not have come in on the side of the Central Powers and German resistance would have collapsed much earlier than it did.

The task undertaken by Russia was too heavy, considering the condition of the country and the low morale of the masses.

THE ECONOMIC RESOURCES OF THE EASTERN MEDITERRANEAN COUNTRIES.
[Le risorse economiche dei paesi mediterranei.] (II) General Deambrosis

Italy occupies a central position in the Mediterranean. General Deambrosis claims that Italy and Germany can develop along their own lines without a clash of interests.

CLAUSEWITZ AND THE THEORY OF WAR.
[Clausewitz e la teoria della guerra.] (III) Colonel Canevari

If the defensive were intrinsically the weaker form, then it would be an absurdity because its purpose is negative. On the contrary, we see that the greatest captains of history have assumed the offensive when they had, or thought they had, a superiority, and took up the defensive when they felt themselves the weaker party. Although no rule can be deducted from Clausewitz' law, it may be logically deduced that the offensive, to succeed, must have a superiority of force — material or moral. This deduction is confirmed by the experience of all wars.

It is said that the offensive has moral superiority. This may be true in certain cases and under certain conditions; but, in general, the attacker has moral superiority because he is the stronger, not because he has taken the offensive.

In Chapter 2, of Book I, which was probably the last written by Clausewitz, he accepts the idea of a war of exhaustion, of which the most brilliant example is the Seven Years' War.

The studies of Clausewitz, the author states, like those of von Bernhardi, are in truth "a torch that throws unlimited amount of light upon the wars of the past and of the future."

In order to find an adequate solution to the problem, a commander must have boldness, firmness and willingness to assume responsibility, qualities which tend to disappear in time of peace.

The brilliant conceptions of Clausewitz, so thoroughly in accord with realities, should become material for study, because those ideas will give the answer to all the varied exigencies of warfare, so long as war shall last.

THE NEW BALANCE IN CENTRAL EUROPE.
[Il nuovo assestamento dell'Europa centrale.] (II)

The writer discusses the annexation of Czechoslovakia and Memel by Germany and the annexation of Albania by Italy.

NOTES ON MOUNTAIN ROADS IN THEIR RELATION TO MILITARY TRAFFIC.
[Nota sulle strade di montagna in relazione al traffico militare.] Professor Rizzetto

Italy's frontiers are entirely in the Alps, where mountain roads play an important part in the movement of troops. Roads should be located in accordance with the military considerations; they should be concealed from view and screened from fire.

REVUE D'ARTILLERIE (France)

By Captain A. L. Keyes, Field Artillery

February 1939

MANEUVERING A BATTALION OF 155-MM GUNS (GPF).
[La manoeuvre d'un groupe de 155 G.P.F.] Colonel Le Nôtre

This article is a study of troop leading by the commander of a battalion of 155-mm guns during the route march and up until its arrival in position. Written solely from the point of view of mobility, it does not treat of the details of reconnaissance and survey.

The doctrine is familiar to the American artillery: maintenance of battery integrity during the route march for purposes of effective march control; early echeloning forward of liaison, reconnaissance, headquarters and pioneer elements so that each will arrive where and when it is needed and can immediately initiate its own work; the proper use of officers and men to mark the route, rendezvous the battalion, insure compliance from the start with traffic and concealment regulations and obtain maximum efficiency in occupation of position; utilization throughout of the mobility of the motor equipment to the fullest extent.

The author establishes several fixed formations or orders in column to correspond with the various phases of the advance. At the simple command, "Formation No. 2 (or other number)," the necessary changes are made.

The article terminates with a problem involving a tactical situation which was solved in July 1938 by a battalion of French artillery. The principles formulated by Colonel Le Nôtre were applied. The time table of the narrative is that which actually resulted. The organization of the French battalion is not essentially different from our own and the problem offers an interesting confirmation of our own doctrine.

A TERRAIN BOARD FOR FIELD ARTILLERY.
[Appareil pour champ de tir réduit.] Lieut. Colonel Morange

Description of construction and operation of a very ingenious terrain board which eliminated all guess-work from this type of problem. By the use of interchangeable scales for direction (a different scale of mils for each range which is a multiple of 270 yards), a command for a deflection change is executed with considerable accuracy. Similarly, interchangeable scales for elevation (a different scale for every different combination of matériel, projectile and fuze) allow commands for elevation to be set off as readily as ranges. Other practical contrivances provide for dispersion in range and height of burst in accordance with the laws of probability.

The terrain board could be constructed by any clever battery mechanic with some necessary assistance from the local quartermaster or ordnance machine shop. Construction of the scales would require a certain amount of painstaking effort. The most efficient operation of the board calls for a team of one officer and five enlisted men with some preliminary drill.

IN SUPPORT OF STANDARDIZATION OF MOTOR VEHICLES.
[Pour un système d'automobiles.] Major Duvignac

The French army has such a large number of vehicle types in service (over 1,000 types), that failure of the supply of parts with resultant disaster seems inevitable in case of war. Several proposals for partial standardization are discussed and the conclusion is drawn that only complete standardization of special military vehicles and of heavy general purpose trucks, for both civilian and military use, will solve this question so vital to national defense. The conditions favoring this step and the means of obtaining the objective are discussed in detail.

MUZZLE BRAKES (STABILIZERS).
[Le frein de bouche.] Lieutenant Bertin

The muzzle brake, by allowing the rearward escape of a large portion of the powder gases, reduces the force of recoil, increases the stability of the projectile in flight and consequently the accuracy of the weapon and reduces the muzzle flash and noise of discharge. With reduction of recoil, larger caliber weapons can be designed which will have the same degree of portability or mobility as smaller calibers now in use. The disadvantage of discharging hot, toxic gases on cannoneer or rifleman can be met by lateral ejection of gases with proper design of orifices to obtain the necessary rapidity of exit. The advantages indicated call for a more extensive application of the principle that has at present been realized.

For the infantry a rifle much more accurate and less fatiguing to fire can be designed and this rifle can be advantageously equipped to carry a telescopic sight; the advantage of being able to deliver precise rifle fire instead of spraying the target area with poorly-aimed rounds from automatic weapons is manifest, with regard both to effect on the enemy and to lessened difficulty in supply of ammunition in the face of aggressive attack aviation. In addition to the rifle, an antitank gun, no heavier than an automatic rifle, effective against light armor, is feasible. This weapon can be issued to combat groups and, with no increase in ammunition expenditure, will add immeasurably to their fire power.

For the field artillery the following advantages can result: a certain lightening of gun and carriage for present calibers or design of larger calibers with the same mobility as present lighter calibers; shallower recoil pits or their complete elimination; lowering of trunnions with greater stability, shorter trails and increase of axle traverse; increased rate of fire; ability to use in the same weapon a wider variety of projectiles with suitable accuracy.

For the antiaircraft artillery the principal additional advantage is the possibility of obtaining mobile guns of greater power for use against high-flying planes.

The decrease in flash, smoke and noise and the favoring of development of self-propelled mounts are of interest to all mobile artillery. The more rapid wear of gun tubes due to increased maximum rates of fire will be compensated for by greater precision and the ability to fire more rounds at the target while it is within range, thus insuring more deadly results with ultimately fewer rounds.

With regard to armament of aircraft, the principal advantage of the muzzle brake is reduction of vibration to which the plane is subjected by the force of recoil; there is no present indication of a need for use of heavier weapons in airplanes.

RAPID PLOTTING WITH BILATERAL OBSERVATION.
[Note sur un graphique de bilatérale.]

The problem is to draw a line on the firing chart which, divided into units, will serve as an approximate scale for plotting observations from each of two lateral observation posts. The article, which refers to a discussion in the issue of July 1938, is not sufficiently complete to permit accurate judgment on the merit of the solution proposed nor on the conditions under which it would be used. Without further information and confronted by the error essential to any solution proposed, the reader's reaction is one of doubt.

MISCELLANEOUS INFORMATION.
[Renseignements divers.]

Photomapping processes employed by the Army Topographical Service.

Armament:

England: 6-inch seacoast gun.
United States: 8-inch railway gun and 16-inch seacoast gun.

Motor transport:

England: Military cross-country trucks.
England: Hydraulic transmissions.
Italy: Artillery tractors.

Soviet Russia: Gasproof overcoat.

March 1939

CONSIDERATIONS REGARDING COMPUTATION OF PROBABILITIES IN ARTILLERY FIRE AGAINST MOVING TANKS.
[Considérations de calcul des probabilités à propos des tirs d'arrêt d'artillerie contre les chars in mouvement.] Lieut. Colonel Duval, Reserve Corps

Although the article is essentially a mathematical study, it presents some interesting conclusions of a practical nature to both artilleryman and tank commander.

It offers in detail a method of determining the probabilities of obtaining effect on moving tanks by a fixed barrage. The barrage front is 100 yards per battery and is covered by sweeping volley fire, each piece opening fire on the right of its portion of the front before the target enters the zone of dispersion at the barrage's fixed range, traversing 8.33 yards to the left between rounds and continuing fire at the maximum rate until the target clears the zone of dispersion. Other conditions are fixed in order to compute the particular results obtained to illustrate the article and these results are tabulated for both the 75-mm gun and the 155-mm howitzer, with tank units of various sizes traveling at different speeds, both perpendicular and oblique to the front, at ranges of 3,000 and 5,000 yards. A method of graphical representation is offered which permits ready discovery of errors in calculation in any similar problem.

Among the conclusions which the author draws from his study are the following:

(1) Only a small proportion of hits can be expected from an antitank barrage; additional and greater effect can be expected from the disorganization which will result where a group of tanks traverses a fire-swept zone.

(2) Since the probabilities of hits increase with reduction of target speed, antitank barrages should be laid down on terrain which forces tanks to decrease their speed. When sufficient ammunition is available, avenues of approach could well be bombarded at the ranges of the proposed barrages before the appearance of the tanks for the purpose of creating shell holes. A few rounds of heavier caliber in an area well cut up by 75-mm fire would offer the attacking vehicles several serious obstacles while the whole area would present to the limited vision of the tank crew a formidable appearance in which small craters could not be distinguished from large ones.

(3) Where the ammunition allows a choice of charges, that giving the smallest angle of fall will offer the best probabilities of direct hits. This will result naturally from the fact that the vulnerable area of the tank is equal to its projection on a plane perpendicular to the tangent to the trajectory at the point of impact.

(4) For the same reason, it is advisable in tank construction to keep the rear of the vehicle as low as possible with the turret well forward, thus decreasing to the greatest degree possible the vulnerable area.

(5) The blast and fragmentation effect of 155-mm projectiles which are not direct hits are undoubtedly important but their magnitude against armored vehicles is not yet known with sufficient accuracy to allow them to enter into this mathematical study.

A 75-MM BATTERY IN THE TEMPEST (MAY 1918).
[Une batterie de 75 dans la tourmente (mai 1918).] Major X

On 27 May 1918, the Germans launched an attack on the front immediately northwest of Reims. The French 45th and 134th Divisions held their

WAR DEPARTMENT
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ground but the British 21st Division on the left was overwhelmed and driven back with great loss. Early on 28 May, the artillery of the French 45th Division changed its direction of fire from northeast to north to protect the division's exposed left flank. Towards noon, the battery commander of the 45th Battery received a fragmentary order indicating the withdrawal of the division artillery under cover of the fire of the battalion to which he belonged; later the other two batteries were to retire, leaving the 45th Battery to cover their withdrawal. Additional orders for the battery were to arrive at about 4:00 PM. No sector of fire was established, no indication given of the position of the supported infantry. The battle had broken down into a series of local engagements and the battery commander soon came to the realization that he was on his own, that his one mission was to support any French infantry wherever and however he could and that all information of both the enemy and his own troops must come from his own agencies.

How he carried on, holding his position in the absence of orders until 8:30 PM, when he pulled out his guns to follow the last of the French infantry combat groups, and then escaping a second time the same night from the closely pursuing German troops, is told with great regard for "human interest."

The battle continued until the German attack finally broke down on 2 June. The 45th Battery withdrew from the front on 4 June with two pieces, all officers, a single sergeant and about fifteen other enlisted men left to furnish a nucleus for reorganization. By mid-June the battery, back to strength with replacements, returned to the lines.

The article may add little to the history of the Great War but it furnishes an excellent lesson to artillerymen who have yet to receive the baptism of fire and in whose peace-time experience orders always arrive and missions are always clearly stated.

A VERTICAL PERSPECTIVE "TERRAIN BOARD."
[Champ de tir vertical perspectif.] (I) Captain Crespin

The complete article is discussed under the same title for the April issue.

DETERMINATION BY FIRING OF THE POSITION OF THE BATTERY WITH RESPECT TO THE OBSERVATION POST.
[Détermination du vecteur de translation par le tir.] Lieutenant Rivet

The method proposed presupposes an acquaintance with an article of equipment known as the universal protractor which apparently serves the same purpose in rapid preparation of fire as the American range-deflection fan. This item of equipment (not described in the article) is simply a straight edge, graduated for range and pivoted at one end on a celluloid sheet; the latter is graduated in mils so that the straight edge may be set to draw a line making any given angle with the center line of the sheet. To use the universal protractor (see Figure No. 1) the direction and range of the objective are measured at the observation post and the target is plotted as on our range-deflection fan. A sheet of tracing paper on which the observation post, the base piece and the reference line (a line of known direction

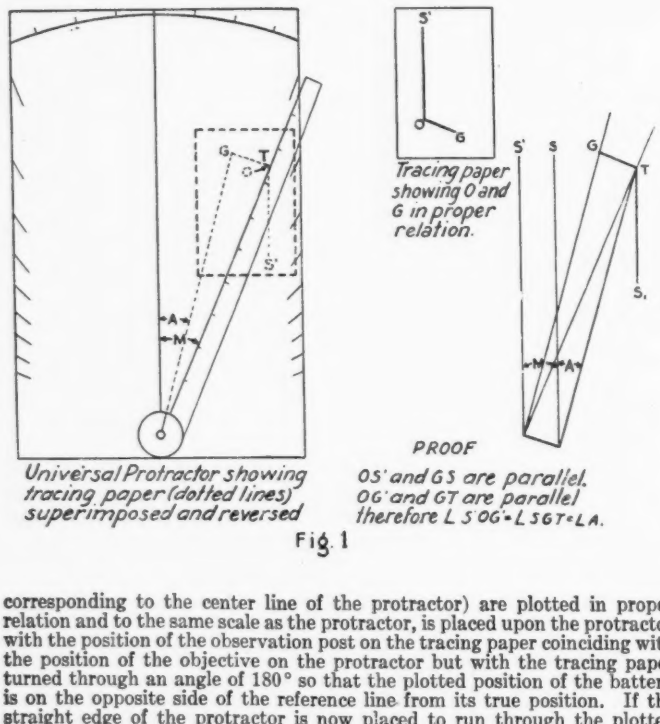

Fig. 1

corresponding to the center line of the protractor) are plotted in proper relation and to the same scale as the protractor, is placed upon the protractor with the position of the observation post on the tracing paper coinciding with the position of the objective on the protractor but with the tracing paper turned through an angle of 180° so that the plotted position of the battery is on the opposite side of the reference line from its true position. If the straight edge of the protractor is now placed to run through the plotted position of the battery on the tracing paper, the deflection and range are read directly from the protractor.

The above explanation does not appear in Lieutenant Rivet's article but is necessary to an understanding of his method for determining by firing the "vecteur de translation," or direction and length of the line O–G (observation post – base piece), when conditions prevent its determination by topographical means. His method is as follows: (See Figure No. 2.)

(1) On a sheet of tracing paper draw a line OS' to represent the reference line and on the line select a point O to represent the observation post.

(2) A round is fired from the base piece on terrain such that the burst occurs at approximately the same altitude as the piece and is visible from the observation post. The angular deviation M from the reference line is measured at the observation post and recorded.

(3) The position of the burst is plotted on the universal protractor from the data used in firing the round and a line B , S ,, is drawn through this point, B ,, parallel to the reference line.

(4) The tracing paper is placed upon the protractor with O on the tracing paper coinciding with B , and the line OS' lying along B , S ,.

(5) The angle M is laid off on the protractor and a line is drawn along the straight edge on the tracing paper.

(6) A second round is fired with different data, the same steps are taken and the point where the second resultant line on the tracing paper intersects the first line gives the position of the base piece on the tracing paper.

The author furnishes no proof of the process but proof is evident from inspection of the accompanying diagram. For each round fired, as B , in the diagram, the method gives a line, G G' in the diagram, which must contain G. The intersection of all these lines must theoretically give the point G.

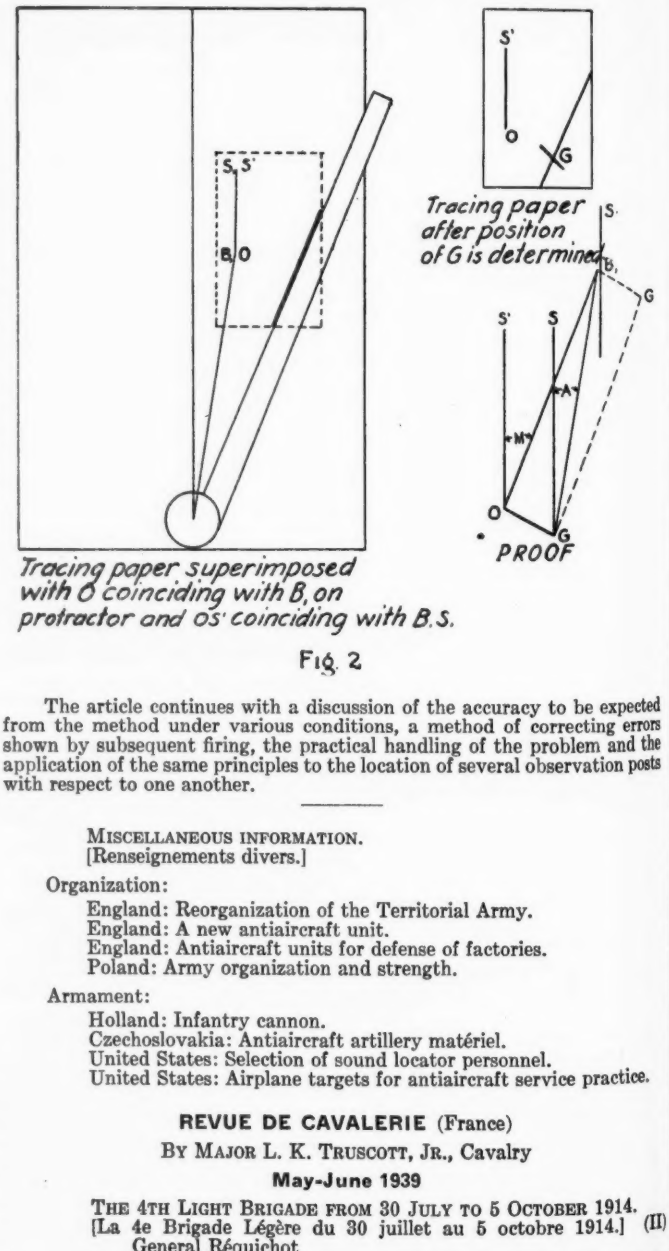

Fig. 2

The article continues with a discussion of the accuracy to be expected from the method under various conditions, a method of correcting errors shown by subsequent firing, the practical handling of the problem and the application of the same principles to the location of several observation posts with respect to one another.

MISCELLANEOUS INFORMATION.
[Renseignements divers.]

Organization:

England: Reorganization of the Territorial Army.
England: A new antiaircraft unit.
England: Antiaircraft units for defense of factories.
Poland: Army organization and strength.

Armament:

Holland: Infantry cannon.
Czechoslovakia: Antiaircraft artillery matériel.
United States: Selection of sound locator personnel.
United States: Airplane targets for antiaircraft service practice.

REVUE DE CAVALERIE (France)

BY MAJOR L. K. TRUSCOTT, JR., Cavalry

May-June 1939

THE 4TH LIGHT BRIGADE FROM 30 JULY TO 5 OCTOBER 1914.
[La 4e Brigade Légère du 30 juillet au 5 octobre 1914.] (II) General Réquichot

General Requichot continues his account of the 4th Light Brigade, which he commanded, during the early days of the World War. Early on 6 August,

the brigade was relieved of its covering mission in the Woevre in the vicinity of Spincourt, and with the remainder of the 4th Cavalry Division passed to command of Sordet, commander of the cavalry corps of the north. During 6 August the brigade entered Belgium near Montmedy, and halted for the night near St. Vincent in the valley of the Semoy, west of the Arlon Gap. On 7 August, the 4th Cavalry Division marched east with the mission of reconnoitering the defile at Stockem and Arlon to determine whether or not it was occupied by the enemy. General Requichot describes the terrain in the area and describes the march dispositions. The 4th Brigade, under his command, formed the advance guard for the division. The division halted at Etalle in position in readiness awaiting information from reconnaissance agencies. During the halt the 4th Brigade was disposed to protect the division. A squadron of German cavalry accompanied by motorcycles approached the division from the south and was fired on by motorcyclists, but withdrew without loss. Halting to reform, it was attacked mounted by a platoon of French cavalry and completely dispersed with heavy loss. General Requichot watched this attack; he gives his account as well as that of the officer who commanded the French platoon. Another detachment of the 4th Brigade was sent to reconnoiter Stockem and Arlon; it completed the reconnaissance mission and obtained information that indicated the strength and composition of German troops in the vicinity. One squadron of the detachment encountered a squadron of German cavalry supported by machine guns in motors; it attacked mounted, completely dispersed the German squadron, and captured prisoners, motors and machine guns. General Requichot includes the personal account of the officer who led this attack.

Summarizing results of the operations of 4 to 7 August, General Requichot states that reconniassance in northern Woevre located the German 6th Cavalry Division and a division of infantry covering the German detrainment at Hagondage. At Arlon the reconnaissance located the German 3d Cavalry Division. Further, French cavalry gained a moral ascendancy over German cavalry that prevented Germans from meeting French cavalry mounted during the entire war. The article is illustrated with three sketches.

INFANTRY SCOUTS, HORSE OR MOTORCYCLE?
[Eclaireurs d'infanterie, cheval ou motocyclette?] General Lestoquoi

In thumbing through my Caesar's Commentaries, I recently found an old, yellowed note: my conception before the war of the role of infantry mounted scouts.

"Infantry mounted scouts constitute a regimental organ at the disposition of the colonel, who can distribute them according to need among the different units under his command.

"Their principal mission is to cooperate in the service of immediate protection for the infantry, halted, in march, or in combat.

"They should first of all be considered as infantry patrols, which mounts permit to displace most rapidly and often, and with less fatigue. Their role is not to fight, but to inform.

"They can be used for transmission of orders and information, but only within their regiment, and in case bicyclists cannot assure this service which pertains to them in principle.

"Infantry mounted scouts find their chief employment in the following cases:

"At the halt they can be detached with advanced posts in a way to relieve the division squadron of this service.

"In march, they stay within range of the infantry and furnish in particular the service of flank protection; during halts, they march on the most favorable observation points.

"In combat, they reconnoiter assembly areas and routes of approach of their units; they can thus aid the approach and the liaison between units.

"The column commander should avoid separating the scouts from their regimental service or from detachments to which they are attached.

"Colonels should not forget that the services rendered by the scouts will depend upon the manner in which their task is regulated. The horses should not be overdriven."

This small, this very small cavalry element was, of all the cavalry, that which responded best to the very just and important prescription of our regulations:

"It is necessary that the infantry be and see itself surrounded with vigilant and active patrols."

In this short phrase was a good part of the question of infantry morale in march and at the halt. Is it still true? Does it express facts in the same manner? Infantry scouts, horse or motor? Let us try to discuss the problem: first, from some war recollections; second, by considering anticipated modes of displacement and movement.

(1) Some War Recollections.—The mounted scouts of my regiment (77th Infantry), constituted at mobilization, comprised 2 sergeants, 1 or 2 corporals, and 16 or 17 troopers. Most of them had never received special training as infantry mounted scouts; they had only a revolver and no saber. Willing and full of initiative, these brave young men were in a few days to render the finest service.

In Lorraine first, then in Belgium, during very hard marches — often in approach formation — imposed by modification of our initial dispositions and the retreat to the Marne, our mounted scouts were very useful. Divided into small patrols (generally 1 noncommissioned officer and 3 troopers) they worked around the regiment, within sight, on the immediate dangerous horizon — to the crests, to the edges of woods, in the ravines — and the infantry very quickly appreciated the moral comfort which the presence of these familiar silhouettes furnished, the fatigues that this presence spared them, the easy and rapid liaison assured without excessive effort with preceding or neighboring regiments. At halts, they assured liaison between the outposts, between the small posts and the colonel; they gave close reconnaissance in advance of the line of advance posts. In combat, they usually remained in reserve at the disposition of the colonel, who utilized them for communication and in certain cases (defensive combat during the retreat), by attaching them to front-line battalions in a situation to use them. Thus, nearly everywhere, they were these "infantry patrols which mounts permitted to displace most rapidly and often, with less fatigue"— and I add: going every place where scouts on foot could go.

In exploitation of success, their role took special importance. It was the case after the Marne: 10 September 1914, the 77th Infantry received orders to advance rapidly from Mondement to Fere-Champenoise. Contact was lost and the only information which the colonel received was that the terrain between the two areas was infested with enemy skirmishers — nay, even with small groups of enemy infantry. The result might have been costly incidents of a nature to unnerve troops still hardly recovered from the very hard combats of preceding days. The regiment took a march formation in small units with battalions widely echelonned in depth. Two patrols of mounted scouts formed the extreme point of the advance guard (as we said it then). On each flank, two patrols similarly scouted to the right and left of the regiment; the remainder (3 troopers) constituted the rear point. In each company, men were designated to observe actions and signals of the mounted scouts, and officers held themselves ready for necessary action. Numerous thickets existed throughout the plain; and in the uncertain situation, the mounted scouts were quickly a great comfort and assistance to our infantrymen by reconnaissance of these thickets. How much time would have been required, what additional fatigues would have been inflicted on my men, if it had been necessary to reconnoiter these thickets on foot, or else what risks I would have been forced to run! Modest but useful, the work of the platoon of mounted scouts responded to all requirements of the situation. It was the same during all the war of movement; and I keep of my platoon of mounted scouts a precise memory filled with gratitude; they saved the legs of my soldiers. In 1918, many of the platoons disappeared by extinction, losses, evacuation of aged men and fathers of families.

(2) What Becomes the Role of Infantry Scouts Considering New Ideas and Their Consequences?—"The creation of motorized units as well as mechanized units, the perfection of means of communication," clearly occasions a particular conception of troop movements: of zones of security within zones of security — certain good minds go as far as to suppose, contrary to past ideas, the absolute character of the security of these zones. It does not seem that the Instruction on the Tactical Employment of Large Units permits following this path, since in the chapter "Security" we read (with comfort) the following prescription: "All troops finally, in all times and in all places should be protected against terrestrial surprise and against combat gas."

Such is the end of "immediate security" that the Instruction clearly distinguishes from "distant security"— creator of liberty of maneuver; and from the "close security"— mother of combat dispositions. And a little farther we find: "that it is the duty of all commanders whether in the place occupied in march dispositions, at halt, or in combat, to provide by permanent measures the immediate security of the unit under his orders." Among these permanent measures figures in first place "the surveillance of the terrain."

It seems useless to press our analysis further and to show in terms of 1939 what is called "surveillance of the terrain" in immediate security. What is necessary for observing the terrain? It is necessary first to go see "within"; it is necessary to have searched. The infantry scout, if he is afoot, will be dead with fatigue before battle; if he is on a motorcycle he will not see "within," he will not see "around," or "beyond." Clattering close to the earth, eyes fixed on the road 25 yards in front under pain of death, prisoner of roads and at best of trails (in dry weather); poor devil launched to adventure, handicapped in difficult terrain by 300 pounds of machine, he will discover danger when he strikes against it only by leaving his motor and often his life. All this leads indisputably to the scout mounted on a horse, together lively and supple, easy to maintain, apt for all terrain, and capable of dividing the work: to the horse, of which the weight is not dead like that of the machine, the problem of more or less practical ground; to the trooper, observation with full liberty of means.

"Distant security" (and in certain cases, the "close security") offers the motorcyclist all desirable occasions for utilizing the speed and means of combat that he possesses; leave it the great and heavy task which consists of creating "zones of security" by distant occupation of favorable lines; and give to the cavalryman, to the good reservist mounted on his nag, the honor of guarding "the queen of battles" since as we have seen, it is still necessary that it "be and see itself surrounded with patrols vigilant and active."

THE SPAHIS IN THE ALPS.
[Les spahis dans les Alpes.] Colonel Peillon

This article is an account of various reconnaissance, marches, and tactical training of the 9th Spahis (Moroccan cavalry) over a period of several years in the high Alps of southeastern France. The various examples indicate the capabilities of cavalry in mountainous country. The study outlines the part played by the regiment in the grand maneuvers of the XIV Corps which took place in this area in 1938. The author presents a list of measures and precautions necessary for cavalry to observe when operating in high mountains. The article concludes with a statement that capabilities are well known to the high command, and that proper tactical employment is a question for the high command to decide. Concerning possibilities, he reminds us of Gambetta's cavalry brigade in Macedonia.

THE HORSE ESTABLISHMENT OF TEBOURBA.
[Etablissement hippique de Tebourba.] Chef d'escadrons de Tavernost

A description of the remount and breeding establishment so named, in Tunisia.

REMARKS ON THE RECONNAISSANCE DETACHMENT.
[Remarques sur le détachment de découverte.] Captain Grosjean

The normal reconnaissance detachment — so designated in regulations — comprises a captain with an armored command car, a motorcycle platoon, and means of communication including an armored radio car and motorcycles. Before development of motorization in the cavalry, reconnaissance detachments normally had a squadron commander, a horse squadron, a group of machine guns, and a platoon of armored cars.

It should be interesting to compare possibilities of the two detachments and to try to draw conclusions as to desirable organization and composition for the motorized reconnaissance detachment which will permit it to accomplish the missions expected by the regulations. We shall refer to the motorized detachment by the letter N; to the horse detachment by the letter A.

Missions of the two are the same except for distance and speed. Detachment A, composed almost entirely of horse elements, is limited to the capabilities of the horse as to speed and distance. Detachment N, entirely motorized, has considerably augmented possibilities in these domains. Besides, it possesses means of communication appropriate to the larger scope. Advantage, therefore, is in favor of Detachment N.

To accomplish missions, methods of action are approximately the same: first, sending forward a reconnaissance element (armored cars); second, when this element has made contact and is stopped by hostile resistance, the main body intervenes: to fix the enemy; to determine his contour, extent, and gaps; to maneuver to break through resistance; to maintain contact while the detachment carries on investigations in other parts of the zone. The reconnaissance element is the same for both detachments: armored cars. Other elements are different: a squadron and a group of machine guns for Detachment A; only a motorcycle platoon for Detachment N. Thus, Detachment A has the means to feel out resistance encountered; Detachment N is too weak to actually verify other than very light resistance. Hence, a marked inferiority in this respect for Detachment N.

This inconvenience is seriously aggravated because enemy means for stopping armored cars have become numerous and efficient (antitank arms and mines). Thus, Detachment N can be stopped by a screen of light resistance, established at little cost to the enemy (feeble effectives), of which it cannot determine the strength and thus cannot find whether or not it can break through. This inconvenience which should not be ignored, is not inherent in the nature (motorized) of Detachment N; it is the composition of the detachment. It is not our business to judge reasons (questions of effectives especially) that led to the organization, but no one can deny that the horse squadron of Detachment A should have been represented by a motorcyclist squadron in Detachment N, instead of only a platoon. In that case, Detachment N, keeping the advantage in speed and range conferred by motorized elements, would have possibilities of maneuver and action in force which Detachment A possesses.

Both Detachment A and Detachment N contain an armored car platoon for reconnoitering in advance of the reconnaissance detachment, on successive objectives. The successive objectives mark bounds of the reconnaissance detachment. The distance between bounds varies according to circumstances (terrain, etc.), but for illustration, we can assume about 6 miles. On reaching the end of a bound, or on encountering resistance, armored cars of Detachment A await the remainder of the detachment. Armored cars of Detachment N, followed closely by the motorcyclists, are joined without delay, but this intimate association of armored cars and motorcyclists is not without inconvenience. Indeed, the motorcyclists risk becoming involved at the same time as the armored cars, and of being surprised on wheels, when they are very vulnerable. Obliged to dismount under fire, they risk casualties, loss of liberty of action, and loss of choice of time and place for their engagement. When the detachment encounters an enemy in march, the operation can be expected to develop as follows: first, the enemy reconnaissance echelon, not having means for fighting armored vehicles, will warn the combat echelon and fade away before the armored cars; second, the combat echelon, warned, will take dispositions especially prepared to meet armored vehicles. Thus, at almost the same moment that armored cars become engaged with antitank weapons of the combat echelon, the motorcyclists will be surprised on wheel by automatic arms of the reconnaissance echelon, waiting in ambush for the motorcycle support that it knows will follow the armored cars. Then the two elements, armored cars and motorcyclists, intended to supplement and aid each other, would find themselves confronted with almost insurmountable difficulties for each with its own means and its own imperfections, each fighting a separate combat under the worst conditions, instead of being able to cooperate and solve the problems successively. Why run this risk by placing motorcyclists on the heels of the armored cars? Armored cars of Detachment A, sent six or more miles in advance, in case of need, await arrival of the horse elements. In the same situation, armored cars of Detachment N would have less time to wait for arrival of motorcyclists, whose speed is superior; besides, the armored car commander has superior means for communicating with the reconnaissance detachment commander (radio). While having motorcyclists follow the armored cars closely is supposed to assure the security of the motorcyclists, in reality that security is completely illusory because light hostile elements will vanish until the armored cars are past and then ambush the motorcyclists that they will expect to be following closely. The armored cars, being engaged themselves, will be unable to come to the aid of the motorcyclists, nor will the motorcyclists be able to aid the armored cars.

The only way to assure security of the motorcyclists is to provide against surprise; for that, it is necessary that armored cars precede them by a distance sufficient to contact the hostile combat echelon before the motorcyclists make contact with the hostile reconnaissance echelon. Thus, motorcyclists would avoid surprise and preserve liberty of action in choice of time and place for combat. If the enemy, instead of being surprised in march, anticipates arrival of the reconnaissance detachment, the action can be expected to develop in a similar way except that the enemy will have more time for organizing his ambuscade and will be able to choose the most favorable place.

We are led to conclude that if Reconnaissance Detachment N had the increased power of a motorcycle squadron, instead of only a platoon, it would operate like Detachment A, clearly separating the reconnaissance element (armored cars) from the main body (motorcyclists) to permit employment of the motorcyclists at time and place chosen by the reconnaissance detachment commander. Thus the commander would avoid the present risk of having his hand forced by events, being surprised, and losing freedom of maneuver.

This study would not be complete without comments and recommendations on organization and composition of the motorized reconnaissance detachments:

(1) Means of Command and Liaison. — Quality and quantity appropriate to needs. Radios are sufficient in number and have great range; progress in radio telephone will facilitate liaison within the detachment. Motorcycle agents are sufficiently numerous and have ample speed and radius of action.

(2) Armored Car Platoon. — Platoons of the light mechanized division contain 5 vehicles; the cavalry division only 3 vehicles. The only reason for the difference is lack of matériel to organize all platoons with 5 vehicles. The advantage of 5 vehicles is obvious. When the platoon reconnoiters to right and left at the end of a bound, with 3 vehicles it must accomplish the reconnaissances successively because 2 vehicles must be used for reconnaissance and one must remain on the axis for antitank defense. With the platoon of 5 cars, two directions can be reconnoitered simultaneously, resulting in a great gain in time in each bound. The sums of all times gained permits the reconnaissance detachment to cover the assigned area more rapidly, which is the end sought.

Depending on organization the platoon has two or three motorcycle messengers. Mounted on solos, they are not protected and cannot use their arms; they cannot be expected to accompany the armored cars into areas covered by hostile fire. It would be desirable to have these messengers grouped in the squadron, for the double advantage of relieving the platoon of useless elements that cannot accompany it under fire, and making the platoon organization entirely homogeneous with 5 identical vehicles. In case of need, the detachment commander could attach messengers to a platoon. Armored car regulations already provide that for marches; the captain distributes messengers according to need.

Armament (light machine guns and antitank weapons) are sufficient. Some think that armored cars might be given mines, but since they are intended for employment in cooperation with motorcyclists, it is preferable to have the motorcycle units transport the mines and not encumber the armored vehicles already restricted for space; it is better that they carry ample ammunition.

(3) Motorcycle Platoon. — Unit of foot fighters transported on side cars. Side cars are satisfactory. Absence of messengers might be noted (sending a side car being undesirable because it takes away a half squad), but the motorcycle platoon operating with the squadron or as a covering detachment has no need for messengers. It is the duty of the captain commanding, when he sends the platoon on an isolated mission (distant security, for example), to provide necessary communications, which he can take from the command platoon. Messengers, therefore, should remain grouped in the squadron echelon, thus permitting more judicious utilization according to need, and leaving the platoon an homogeneous composition (only side cars).

Dismounted. — Personnel is insufficient, especially when the platoon advances; composed entirely of automatic rifle squads, lacking scouts, it needs scouts to fill the line and assure liaison between the squads often widely spaced, to establish observation, and for patrols. At halt and during advance, the platoon needs messengers.

Armament (4 automatic rifles, 3 grenade dischargers) is appreciable and very effective against personnel, but without effect against armored vehicles. Antitank weapons would weight the platoon, but it could be given mines to permit interdiction of passages for armored vehicles. Side cars necessary for transport of additional personnel for the purpose could carry the mines without diminishing ammunition carried by the platoon. Transport of mines by light truck is not advisable because each group should include mines organically. This additional personnel and armament would require small increase in personnel and matériel if platoons were organized as follows: Command group: 3 side cars, lieutenant, messenger; corporal observer, messenger; sergeant assistant, mechanic. 1st combat group: 6 side cars; sergeant (group leader), messenger; corporal scout (grenadier), rifle (grenadier) scout; corporal automatic rifleman, carrier; automatic rifleman, carrier; corporal rifleman, carrier; automatic rifleman, carrier. 2d combat group: similar organization. Total: 1 officer, 3 noncommissioned officers, and 26 men on 15 side cars, instead of 1 officer, 3 noncommissioned officers, and 22 men on 13 side cars.

In resumé, Detachment N can be improved in three points: Composition — by giving it a motorcycle squadron in place of a platoon, thus giving it the power that it lacks. Mode of action — by separating the reconnaissance element (armored) from the main body, which will assure liberty of action. Organization of component units — in which small modifications will increase possibilities of the motorcycle platoon. Such a detachment, preserving speed and range, could feel out resistance encountered, and having driven off light resistance, would be stopped only by important hostile strength. Now it risks being stopped by a screen behind which it must remain ignorant.

RAID IN TRAVONO TRENCH (VICINITY OF REIMS), 3 January 1918.
[Le coup de main de la tranchée de Tarnovo (Région de Reims) 3 janvier 1918.] Captain Ingold

An account of a raid executed by a detachment of volunteers of the 12th Cuirassiers, a model of its kind. The author briefly describes the

preparation and execution of the raid, which permitted identification of the German 83d Infantry (Reserve) and provided valuable information as to German defenses. The article is illustrated with one sketch.

REREADING DE BRACK.
[En relisant de Brack.]
Summarizing important qualities of the cavalry leader in campaign.

REVUE D'INFANTERIE (France)

BY LIEUTENANT COLONEL E. M. BENITEZ, Coast Artillery Corps

April 1939

THE PROBLEM OF COMMAND.
[Le problème du commandement.] General Tanant

Those who expect to exercise command, from the second lieutenant to the commander-in-chief, should have a well tempered soul because they must set an example to their subordinates.

Foremost among the essential qualities of a soldier is bravery. However, the leader is a human being like all others and, with very rare exceptions, feels the effects of fear at times. Only his will enables him to dominate his natural instincts.

The place of the commander is where — by utilizing his communication and liaison agencies, which are the means of command — he can be well informed to render his decisions.

Sense of responsibility is not less essential than bravery. This requires that great characteristic in a commander: character. Intelligence and all the qualities in the world are worthless if a man does not possess character.

The place of the commander is where he can and must exercise his command, there and there only. This has not always been understood. At the beginning of the World War there were commanders who thought they would be considered cowards if they stayed in a sheltered location. Thus we see, during the race to the sea, an army commander with his command post in a trench where, surrounded by several officers, he expected to be able to direct a battle which was taking place on an immense front.

Rocroy, Wagram, Austerlitz and Waterloo should not be discussed because the theater of operations of those battles was small.

A division in 1870 maneuvered in close ranks. Its reserves were massed just a few hundred yards behind the firing line. The commander could often see practically the entire battlefield.

The story goes that in 1918 a division commander was boasting that he himself had trained a front line battalion. Some one asked him the question: "Didn't you have any battalion or regimental commanders? Who was training your division in the meantime?"

It should be borne in mind that the progress at the front often depends upon the services of supply in rear.

A commander — division, regiment or battalion — must know the condition of his unit, its physical and moral condition. He must be familiar with the means at his disposal — munitions, supplies of all kinds, sanitary service. He must know exactly what his unit is capable of doing.

In short, the commander of today, as in the past, should have: knowledge, capability and will. He must know his business. The World War taught that the field of action had been greatly amplified; that the combat plan anticipated was of the utmost importance and that the battlefield was merely the execution of a plan previously conceived. The real leader should possess knowledge and resolution; if these qualities are not found together, then there will be a powerless intelligence or a powerful imbecility.

Courage and bravery are not sufficient. The commander must know the possibility of the services at the rear as well as at the front so that he may be able to profit from what he can do and from what he can see. In the performance of his task he must possess one quality above all others: character.

THOUGHTS ON THE MOTORIZATION OF INFANTRY.
[Reflexions sur la motorisation de l'infanterie.] Burbus

Motorization is the utilization of motor vehicles to transport troops and supplies.

Mechanization is the utilization in combat of specially built motor vehicles, usually armored, that are capable of functioning in all kinds of terrain.

Motorization multiplies the strategic mobility of a unit and the number of units will depend upon the automotive resources of the country. The chief purpose of motorization is that, besides conserving the tactical qualities of the infantry, it transports rapidly the troops with their means from one place to another. However, as one of our best commanders has said, "A motorized unit is paralyzed until it sets its foot on the ground."

THE WAR ON GLACIERS — THE COMBATS IN THE ORTLER MASSIF, 1915-1918.
[La guerre sur les glaciers: les combats dans le massif de l'Ortler (1915-1918).] Lieut. Colonel Regnault

An account of combats in the mountainous region of the Ortler between the Austrians and Italians during the World War. The author concludes that war in high mountains is primarily a question of transportation. The Austrians had mountain troops carefully trained for this type of warfare.

TANK TACTICS AND THEIR EVOLUTION.
[La tactique des chars de combat et son évolution.] Captain Perré

Captain Perré discusses the evolution of tanks since their appearance on the battlefield more than twenty years ago. The evolution of tactics, he says, depends, among other things, upon the rate at which they can be built and the capabilities of the new models.

The latest French tank — Tank D — replaces the Renault F.T. and gives the French a more powerful assault unit. These tanks have a crew of three men — tank chief, mechanic and radio operator; are better armored and faster than the Mark V and can negotiate all the common obstacles of the battlefield. Their appearance has made possible the fight, with probabilities of success, against enemy armored vehicles and antitank weapons has made possible the use of tanks in mass and has accelerated the rhythm of combat.

THE FIRST STEPS OF THE BRITISH TANK — THE BATTLE OF 15 SEPTEMBER 1916.
[Les premiers pas du char britannique: la bataille du 15 septembre 1916.] (I) Lieut. Colonel Gallini

Sir Douglas Haig, who assumed command of the British forces on 17 December 1915, was acquainted with the matériel under construction and was impatiently waiting to have sufficient number of tanks in order to use them. The opportunity came in 1916.

Those interested in tank tactics will find this article very interesting. The operations described are illustrated by an excellent sketch and a topographical map of the theater of operations.

THE ATMOSPHERE OF THE BATTLEFIELD.
[L'atmosphère du champ de bataille.] (I) Lieut. Colonel Armengaud

The first instalment discusses the elements that make up the atmosphere of the battlefield, the first of which is the physical condition of the man. The second factor is the moral condition, which is so greatly stressed in peace time and which is so important in war.

The favorable factors enumerated are: first, the moral education of the soldier, by means of which the sense of duty, patriotism and discipline enables him to overcome fear. The second is the "fire of action." This is the hardest on the infantryman, particularly those seconds which he has to wait in the trenches until H hour; then the sorrow which he experiences when he learns of the loss of some dear comrade. The third factor is the noise of combat, which makes it practically impossible to distinguish the friendly from the hostile shells. The fourth factor is the introduction of the machine on the battlefield (machine guns, 25-mm and 37-mm mortars).

The principal factor that maintains the morale of the men in the battlefield is the influence of the leader, who by his prestige, knowledge and personality has a tremendous influence upon his men.

May 1939

RENOVATION OF FRENCH INFANTRY ARMAMENT.
[Rénovation de notre armement d'infanterie.] Currus

At the beginning of the World War the French were using the rifle M-1886, with which practically all men were equipped; the musket Model 1892 for the machine gunners' individual protection; the Saint-Etienne machine gun Model 1907 at the rate of two per battalion, and the revolver Model 1892, individual defensive weapons for officers and some noncommissioned officers.

Besides the ammunition carried by the men, each company had a wagon carrying 25,000 rifle cartridges. The machine-gun ammunition was carried partly on mule back or in wagonettes (36,000 cartridges per piece) and partly in caissons (each carrying 18,000 cartridges per two pieces).

The only means of communication (besides runners) was the field telephone (one per battalion).

The only means of observation were field glasses owned by officers and an 80-mm "Barr et Stroud" range-finder per each machine-gun section.

The fire power of the infantry regiment (3 battalions) including all weapons, was as follows:

3,000 rifles firing at the rate of 10 shots per minute: 30,000 shots.
6 machine guns firing 150 rounds per minute: 900 shots.
Total: 30,900 bullets, each weighing 12.8 grams or a total of 395 kilograms.

By the end of the war, infantry equipment had undergone many changes.

The 1886-93 rifles had been replaced to a large extent by the 1907-15 rifle with a clip of three cartridges and by the 1907-15 rifle with a clip of five cartridges. The number of men in the regiment armed with the rifle had decreased considerably.

The 1892 musket had been replaced by that 1892 M-16 model. The revolver had been partially replaced by the automatic pistol. The Saint Etienne machine gun had been replaced by the Hotchkiss M-1914 and the allotment of these arms per regiment had continuously increased as follows:

August 1914	6 machine guns
February 1915	8 machine guns
June 1915	12 machine guns
April 1916	24 machine guns
August 1917	36 machine guns

The automatic rifle was adopted in February 1916 and issued, at first, three per company; increased towards the close of the war to twelve per company.

Curved fire was provided by hand and rifle grenades and the 37-mm Jouhandeau-Deslandes and Stokes mortars which by 1917 were provided at the rate of three per regiment. The 37-mm gun M 1916 was put in service in 1916 and issued at the rate of three per regiment.

Thus the fire power of the regiment calculated on the same basis as in 1914 was as follows:

405 rifles plus 81 automatic rifles plus 24 Hotchkiss machine guns	212 kilograms
81 grenades V. B.	318 kilograms
3 37-mm guns	16 kilograms
3 Stokes mortars	195 kilograms
Total	751 kilograms

In short, the evolution of infantry armament resulted in a considerable increase in fire power of the regiment; better adaptation of armament to the nature of the objectives; decrease in number of rifles; multiplication of the automatic arms; introduction of curved fire weapons (grenades and mortars); introduction of the 37-mm gun; increase of vehicles; and finally, great improvement in means of observation and communication.

During the second period from 1924 to 1935 the program of 1921 was carried out. During this period, the C.S.R.G. machine gun was replaced by the present model, a modern weapon, lighter and of longer range. The Stokes mortar was replaced by the Brandt 81-mm, while the 37-mm cannon was replaced by a more powerful antitank gun.

The writer believes that the French infantry is today equipped with the most modern weapons, second to none.

RECONNAISSANCE AND IDENTIFICATION OF TANKS IN COMBAT

[La reconnaissance et l'identification des engins blindés au combat.] (I) Captain Lehoux

A long discussion of the means available to distinguish friendly from hostile tanks. The means available are our own troops, tanks and aviation.

The author cites an example of misinformation during the World War and believes that similar cases may occur in future wars. For this reason he thinks that the problem deserves consideration.

THE FIRST STEP OF THE BRITISH TANK: THE BATTLE OF 15 SEPTEMBER 1916.

[Les premiers pas du char britannique: la bataille du 15 septembre 1916.] (II) Lieut. Colonel Gallini

In this instalment, Colonel Gallini gives a detailed account of the role played by tanks in the British offensive of 15 September 1916, illustrated by excellent sketches. Of the 36 tanks that reached the line of departure, hardly a dozen played their intended role. The tank losses were heavy. Fourteen tanks were put out of action by artillery fire; five others caught fire; seven overturned in the trenches where they remained; two stalled and were either disabled or destroyed by fire on the 16th, others were rendered unserviceable through several causes; in short, the tank losses amounted to eighty-eight per cent.

Other tank actions are discussed and the excellent work done by these armored cars are pointed out. The author concludes with the remark that while tanks did not win the war all by themselves, they contributed greatly to the final victory.

GUERRILLAS.

[Guérillas.] Major Pascot

An account of the organization and evolution of the guerrilla system in China. The Guerrillas' regulations adopted by Chiang Kai-shek in February 1938 are given in full.

THE ATMOSPHERE OF THE BATTLEFIELD.

[L'atmosphère du champ de bataille.] (II) Lieut. Colonel Armengaud

Colonel Armengaud concludes his study with the remark that a warned man is worth two. "Experience is the fountain of truth," said Poincaré. The future soldiers should benefit from the experiences of the veterans.

REVUE MILITAIRE SUISSE (Switzerland)

BY LIEUTENANT F. R. HENRIKSEN, Infantry-Reserve

April 1939

PSYCHOLOGY APPLIED TO THE MILITARY SERVICE.

[La psychologie appliquée au service de l'armée.] Colonel Carrard

The author, who is also the director of the Institute of Applied Psychology of Zurich and of Lausanne, gives an interesting and instructive discourse on psychology applied to the selection of aspirant officers, and of noncommissioned officers.

In the summer of 1936 the author conducted tests to this effect with Swiss infantry and signal corps troops. The process employed is described in a general way, as well as the human qualities tested, character, aptitude, and intelligence, integrals for military leadership.

ECONOMIC PREPARATIONS FOR WAR.

[La préparation économique à la guerre.] (I) Lieutenant Ducret

A short survey is made by the author of the current standing of Switzerland's army, population and basic economics which depend primarily on her exports of manufactured products and the import of food products because Switzerland can only supply foodstuffs for two-thirds of her population, and the import of raw materials for her manufacturing industries. Furthermore, the author points out that Swiss industrial centers are located in the most vulnerable part of the country, her frontier regions.

The author presents in detail the problems of labor, of transportation, and of materials (foodstuffs, fuel, lubricants, etc.), but offers no solution. It is, however, of interest to note the Swiss attitude that the entire country would become a theater of operations because of its size. Unlike the geographically larger states who have their Zone of the Interior, Switzerland has none.

Where France, Italy and Germany have made efforts to augment their motor fuel, Switzerland made none. Out of the 19,000 trucks and commercial vehicles in Switzerland, only 130 use wood gas.

IMPORTANCE OF THE HORSE IN NATIONAL DEFENSE.

[L'importance du cheval pour la défense nationale.] Francois Vouga

This article brings out some valuable facts concerning horses of all classifications, which are apt to be overlooked because of the current interest in mechanization and motorization.

Figures are quoted from the War of 1914-1918, when Germany had increased her army's horses by 800% six months after the outbreak of hostilities, and lost 850,000 horses during the entire war.

France had 900,000 horses within her army, and during the war bought abroad 525,000 head. Austria mobilized 800,000 horses and Great Britain imported 525,000 head.

The author offers these figures for reflection, then cites Poland as the greatest breeder of horses outside the Soviet Union.

In Poland the breeding of horses was a government enterprise under the close supervision of the military. Since 70% of the population is engaged in agriculture the horse is the most widely used means of labor and transportation. In the spring of 1939 Poland had 4,000,000 head of horses, of which one-fourth were animals under 4 years of age. The annual expenditure for feed amounted to 900,000,000 zlotys, a considerable sum in Poland's national economy. Nevertheless, Poland did not consider reducing its number of horses but rather of increasing and improving the breed. For in no other country does the horse play such an important role in agriculture, transportation and in the army as it does in Poland.

The Polish state owned 13 stud farms, of which the most important is the one at Janov-Podlaski, founded in 1817, and which breeds Arabs and Anglo-Arabs; Polish Arabs being classed with the best in the world. Even the famous German stud farm at Trakehnen, East Prussia, purchased an Arab stallion from Janov in 1936 to provide new blood and to ameliorate their strain.

The Polish state had on these 13 farms 1,550 stallions and 87,000 mares.

Outside of these pure breeds the country abounds in other types of horses, notably the small native Polish horse, and the mountain horse called "Hucul" (pony). These Polish horses have a long established reputation for their endurance, their resistance under harsh climatic conditions, and the fact that they are easy to feed.

Export of these horses was under the strictest government supervision, initiated by the military. Markets for the Polish horses were found throughout Europe, some even found their way to America and Japan.

The author concludes with an appeal to his Swiss compatriots to make more extensive horse-breeding a national duty.

May 1939

DOES THE RIFLE FACE A CRISIS?

[Y a-t-il une crise du fusil?] General Clément-Grandcourt

This French general's article begins with some trenchant remarks on the controversy which seems to exist in some European military circles of rifle versus machine gun.

He proceeds to show how it had its foundation in the emphasis the various European armies laid on rifle marksmanship by 1914. British and German troops were the most throughly trained. The Russians the most mediocre, along the lines laid down by the Russian general Souvarof: "The cartridge is folly, the bayonet's the thing." (La balle est folle; la baïonnette est une luronne.] The French army of 1914 presented the peculiar spectacle of having a great variety in quality of musketry training, from the best to the mediocre; the chasseurs alpins being the best, and the Parisian garrison making the most unfavorable showing, according to the author. The praise and blame for this, where it applies, is laid by the author on the garrison and regional commanders.

In 1914 France had the superiority in artillery, but Germany's infantry maintained a deadly fire superiority over the French. German superiority in training of field exercises and patrolling, together with German fire superiority, tended to increase French losses and decrease the German losses. General de Mondésir, commanding the VIII Corps, reported "severe daily losses, particularly of officers." [One officer of this corps, engaged in Ailly Woods, told the author of 150 men of his company killed by head wounds.]

The British practice of sniping (tir à la bécassine) soon caused the establishment of a snipers school for French infantry at Mont-des-Cats, the cadre of which consisted of a commandant, four officer instructors, and eleven noncommissioned officers, of whom two were armorer-opticians.

The instruction took place on varied and broken terrain; the course concluding with practice in night sniping. The men sent to this school were strictly selected on the basis of physical, mental and moral qualifications. Not anybody can become a sniper.

Naturally, the nature of this specialized branch of infantry attracted many volunteers.

At present the organization of the British infantry battalion includes 72 sharpshooters whose job is to "bring down" enemy officers, to deliver

incessant harassment fire, to fire through the apertures of tanks and combat cars, etc. This is evidently a survival of sniping.

The author concludes by pointing out the difference in ammunition expenditure of rifles and automatic weapons compared with the results obtained, in favor of the rifle. He cites the fact that British and American riflemen are trained in delivering antiaircraft rifle fire, in emphasis of his argument.

ECONOMIC PREPARATION FOR WAR.
[La préparation économique à la guerre.] (II) Lieutenant Ducret

In his concluding article the author generalizes on industrial mobilization from the Swiss point of view, quoting chiefly from foreign military and industrial leaders. Industrially and agriculturally, Switzerland is one of the least favored nations, should she become actively involved in conflict.

From the financial point of view the author merely points out the financial and economic crisis which would result from Switzerland's active participation in a European war.

As in all other countries there exists in Switzerland an industrial mobilization commission (Commission Interdépartementale pour les Affaires d'Economie de Guerre).

In conclusion, it is the author's suggestion that since the war of tomorrow will be totalitarian in nature, the nation makes all possible sacrifices as to personal liberty and enterprises to the interest of the commonwealth's well-being, should war come.

June 1939

SOME QUESTIONS ON ACTUAL MOUNTAIN WARFARE.
[Quelques questions d'actualité sur la guerre en montagne.] Colonel Chatrian

The author, Commandant of the Italian Military School at Naples, begins by calling attention to the two schools of thought, one giving the preponderance to material, and the other to men, infantry reinforced by light artillery. The latter giving greater maneuverability and flexibility while for mechanized equipment the necessary plain areas may not always be available.

In regard to flexibility, an example of the Italian campaign in Ethiopia is cited, those of the Ascianghi and of the Amba Uork, in February 1936.

In the Ascianghi, an Italian reconnaissance group consisting of three alpine battalions and a battery of mountain artillery, started for the key position of Mount Mecan. The enemy was only a day's march away, and outnumbered the Italians fifteen to one.

The occupation of Mount Mecan was accomplished under conditions considered prohibitive, because:

The Italians were four days' march from their nearest base;

They were in possession of only a poor mule track; they had to cross three successive peaks with a total difference in altitude of more than 4,000 yards, and thus were completely out of view of any other Italian force.

This was accomplished by a commander free from tactical prejudice as regards supply bases.

At the Amba Uork (Gold Mountain), a small force of crack mountain troops succeeded in scaling, at night, two peaks which the Abyssinians considered absolutely unscaleable. This surprise action caused the collapse of the entire defense position.

The Civil War in Spain showed similar tactics on the part of the Franco troops in the campaigns preceding the taking of Malaga (February 1937) and of Santander (August 1937).

Under "Motors and Mountains" the author stresses the importance of aviation in mountain warfare for long and short distance reconnaissance flights, bombardment, liaison for ground troops, artillery service, and aerial revictualling.

Tanks and combat cars too have their role in mountain warfare, according to the author. The extent of their use will depend largely on the terrain.

Mountain warfare devolves upon hardy and well-trained individuals. The Italian army keeps several regiments garrisoned in the Alpine and Apennine regions. The infantry regiments of these garrisons are well equipped with high angle fire weapons (the light 45-mm mortar and the Stokes mortar). While officers and noncommissioned officers receive their basic training in alpine and military skiing with the regiment, they go on for further instruction to the Military School of Alpinism at Aosta.

The Italian army, according to the author, uses a great variety of artillery for mountain warfare, and is well adapted to it. Engineer troops are chiefly sappers and telepherists.

All in all Italy has five Alpine divisions.

MACHINE-GUN TRANSPORT AND FIRE IN WINTER.
[Transport de la mitrailleuse et tirs en hiver.] Lieutenant Gallusser

An excellent article on machine-gun transport and fire in mountain warfare as conducted by the Swiss infantry school in its maneuver course for company officers.

ROYAL AIR FORCE QUARTERLY (Great Britain)

October 1939

THROUGH YUGOSLAVIA TO ATHENS BY CAR

AIR NOTES: SUMMARY OF "LES ENSEIGNEMENTS AÉRIENE DE LA GUERRE D'ESPAGNA." By C. Rougeron

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VETERINARY BULLETIN

(Supplement to "The Army Medical Bulletin")

July 1939

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THE SANITARY CONTROL OF MILK SUPPLIES DISTANT FROM THE LABORATORY. Captain Hale

INSPECTION OF DAIRY PRODUCTS. Lieut. Colonel Moore

WISSEN UND WEHR (Germany)

BY CAPTAIN H. D. KEHM, Field Artillery

March 1939

FREDERICK THE GREAT AND THE CULT OF EMPIRE.
[Friedrich der Grosze und der Reichsgedanke.] Alfred Baeumler

The author makes the point that despite the fact that Frederick II outwardly gave German particularism a start by his struggles against the Holy Roman Empire and his encouragement of things Prussian, he actually laid the foundations for the real German Empire. The Hapsburgs by their emphasis on loyalty to their house and by their strong Catholicism tended to break down the spirit of Germanism. Frederick broke the power of the Hapsburgs when he obtained control of Silesia. By such action he focused the attention of the germanic peoples on a truly German, rather than a composite empire.

THE STRATEGY OF NAPOLEON AND MOLTKE.
[Napoleonische und Moltkesche Strategie.] Eberhard Kessel

German authorities for many years have concerned themselves with comparisons between the strategic principles of Napoleon and those of the elder von Moltke. A considerable group appears to have come to the conclusion that not only are there distinct differences between the two, but that in many respects they are opposites. The author maintains that this is not true. He holds that the two great leaders accepted the same principles but that differences in means required differences in methods.

The author is particularly concerned with the principle of concentration. This he says is the one upon which many authorities say that the two great soldiers did not see eye to eye. Napoleon, it is pointed out, emphasized the point that an army moving in separate columns must first concentrate and then move to combat. Moltke suggested the advance on a broad front and even bringing up forces from divergent directions to assemble on the actual field of battle, as was done, for example, at Königgratz.

The article is of interest for several reasons. First, it traces the development of strategical concepts from the time of Frederick the Great; second, it contains numerous references to treatises on strategy which may well be of importance to the student of military thought; third, it brings out several stimulating suggestions. Of the latter, two are especially worthy of note.

The writer points out that Napoleon did his fighting first and then wrote and theorized about it. He was first the actor, then the thinker. It is, therefore, natural that we find frequent differences between his precepts and his actions. Moltke, on the other hand, was a mature student of war before he fought one. He had some time to crystallize his thinking between wars and to develop sound strategical concepts. The author also points out that Moltke considered Königgratz a special situation, and that he did not by any means believe that as a principle, forces should be concentrated on the battlefield from widely separated directions. The author points out that terrain and communications conditions forced Moltke's hand. He might well have added politics. The demand of the Silesians that an army be interposed between them and the Austrians was one of the many difficulties that Moltke had to overcome.

The writer concludes that the increasing size of armies and the increasing range of weapons forced Moltke to the action of advancing to battle in numerous columns on a broad front, whereas Napoleon, in his day, could first assemble his forces and then give battle. These differences do not illustrate antithetical principles; they are different methods of carrying out the fundamental precept of bringing the decisive force to bear at the decisive point.

NATIONAL DEFENSE PROGRAMS OF THE GREAT DEMOCRACIES.
[Die Wehrwirtschaft der groszen Demokratien.] Dr. P. Osthold

The author holds that the measures for national defense taken in the three great democracies, England, France, and the United States, may be viewed as a common program for the historical reason that these nations were recently allies and hence have a strong attachment to each other.

Having established this common base for considering the defense activities of the three countries, the author goes on to point out some of the leading characteristics and differences in the programs which they follow.

He points out that all of them base their programs on World War experience and recognize the need for greater centralization of power in time of war than they are willing to have in time of peace. He shows how advancing industrial progress has forced some curtailing of liberty of action — especially economic — and cites legislation to further curtail this element in the event of war.

The effect, as the author sees it, of the strategic positions of these nations on their programs is strikingly shown. It forces France to be in a state of immediate readiness for war and to give priority to her army. England, too, must be ready on D-day but she needs to place greatest emphasis on a navy. There is no time to augment her defensive measures to a very considerable degree after war was inaugurated.

The significance of the economic situation of the three countries in their defense programs is interpreted as follows. England imports about 70% of her essential supplies; she must, therefore, maintain access to these resources. The author points out that England has taken measures to set up stocks of essentials within the land.

France is almost self-supporting, as far as the availability of most essentials is concerned; her problem is one of labor. That is, she has the land and the resources, but when great numbers of men are called to the colors there will be, as there was in the World War, a shortage of men to farm the land and work the mines and industries. The net result is that France, like England, must import vital goods in the event of war. Her colonies will be of considerable help in this connection.

Dr. Osthold makes some interesting observations on the relative merits and problems of the democratic and the totalitarian states in matters of defense. He is of the opinion that a major war will mean the end of democracy. The democracies recognize this, he believes, and are bending every effort to preserve peace. At the same time they are hoping to shape economic and political developments so that they may pass to a war footing with the least surrender of liberty and the greatest amount of efficiency. As should be expected, he feels the authoritarian state is in a much better position to solve this problem as well as those attendant upon an expanding industrialism and mechanization.

LAGARDE, THE FIRST MAJOR BATTLE OF THE WORLD WAR, 11 AUGUST 1914.
[Lagarde, das erste gröszere Gefecht im Weltkriege am 11. August 1914.] (II) Colonel v.Nippold

This article concludes the description started in the February issue. After completing the presentation of the German side, the author presents some aspects of the battle from the French side.

April 1939

A PORTRAIT OF THE MODERN GENERAL.
[Das Bild des modernen Feldherrn.] Wolfgang Foerster

This article is written in answer to certain criticisms which General Wetzell (Retired) made of an essay, under the same title, included in a recently published compendium, "Army Commanders of the World War." (See "Militär-Wochenblatt," 17, 24 February, 3 March 1939; also 14, 21, 28 July 1939.) It is most interesting in the sections which comment on the tactics and strategy of Napoleon and the elder Moltke. In fact, this discussion is far better than the one which appeared in the March issue under the title, "The Strategy of Napoleon and Moltke" (see above).

There is also a discussion of a difference of opinion as to the appropriate relations between the military and civil heads of a state in time of war. Foerster (who is not, by the way, the one of Danzig fame) appears to believe that the civil power must be consulted as to whether or not a particular (large scale) operation should be undertaken, but that the military commander, alone, must control the carrying out of the operation.

THE ECONOMIC MOBILIZATION OF THE AVIATION INDUSTRY IN FOREIGN COUNTRIES.
[Die wirtschaftliche Mobilmachung der ausländischen Flugzeugindustrie.] Dr. Wagenführ

The author points out that there is not as yet a commonly accepted set of doctrines in respect to air warfare, but that there are three characteristics, generally recognized, which must be kept in mind in determining the economic requirements of such a combat. They are:

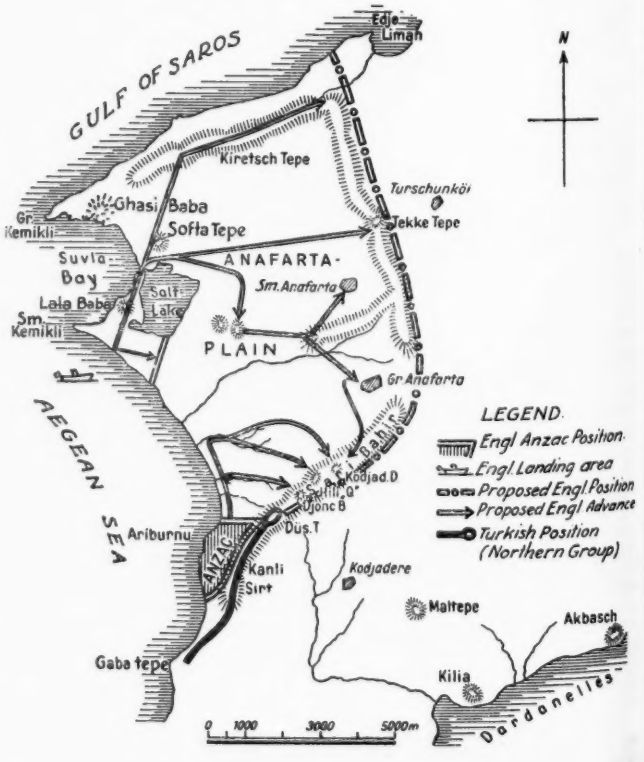
(1) Air power is a weapon that must be prepared to go into action on the day war begins.
(2) Air power must be especially organized for employment in mass.
(3) Initially, there will be great losses in aircraft and personnel. A large reserve in men and matériel must be available then and constantly throughout the war.

MINOR CAUSES — MAJOR EFFECTS. BEGINNING OF THE AUGUST 1915 GALLIPOLI CAMPAIGN.
[Kleine Ursachen — grosze Wirkungen. Beginn der Augustschlacht 1915 auf Gallipoli.] (I) Major General Hans Kannengieszer Pascha

General Kannengieszer commanded the Turkish 9th Division in the defense of the Dardanelles in August of 1915 and in this instalment proposes to show how minor incidents had decisive effects on the action starting on the morning of 7 August when the British made their landing at Suvla Bay and initiated a drive, in conjunction with an advance from the area held by the Anzacs, to take the heights commanding the Anafarta Plain.

According to the author, British plans were well laid and the Turks were taken by surprise. The plan was to move up during darkness and assault the heights just before daylight. It was known that they were unoccupied and secret and rapid advances were planned to insure reaching them before any resistance of importance could be set up.

General Ian Hamilton's plan of operations is shown on sketch. A determined attack was to be initiated against the Turkish position in the late afternoon of the 6th and to continue into the night. The object of this attack was to draw reserves and to pin the Turks to their occupied lines. The author states that this plan achieved its object for his division was called up to restore a portion of the southern section of the Turkish position on the 6th, and had ultimately, as we shall see, to be employed to the north of the Turkish north flank. While this attack was being made, a force of three reinforced brigades, General Godley commanding, was to move to the north along the coast behind the Anzac lines and then to turn east finally in three columns to take the Sari Bahir before daybreak. The columns were to advance up three valleys leading to key points on the crest. The brigades were expressly urged to advance vigorously and without respect to the troops on their flanks. Reconnaissance had been strictly limited in the interests of surprise. The terrain had been studied by a few officers from air photographs and by observation from British ships. In addition to the officers, some Greeks, former residents of the area, were employed as guides for the brigades.



Simultaneously with this advance the British IX Army Corps was to be landed in the Suvla Bay area beginning at 10:00 PM. The individual brigades were to advance as soon as landed and to take the immediate heights — known to be lightly held — and then to advance to take the Kiretsch Tepe, and the Teke Tepe before daybreak (see sketch).

In brief, the plan contemplated a march and a landing under cover of darkness, followed by the seizure of commanding terrain before daylight, made British intentions clear to the enemy.

The advance of the south column, the New Zealand Brigade, started at 11:30 PM, one and one-half hours late because the commander did not wish to encounter the scattered shell fire delivered into the ravines by Turkish batteries. After the march commenced and the turn to the east had been made, the Canterbury Battalion was sent up a parallel draw to unite with the main column later on. This battalion became lost, commands were incorrectly transmitted, and when the moon came out it found itself back on the coast where it turned out of column. The main column reached the rendezvous point, and failing to meet the detached battalion — waited; in spite of the fact that Djonc Bahir, its unoccupied key terrain objective, was only 1,300 yards away!

Returning now to the Turkish side, we find General Kannengieszer and his staff preceding their division which had been ordered to move to the north to occupy Djonc Bahir, arriving at that point about 6:00 AM. Reconnaissance was initiated at once because British troops could be seen disembarking from numerous ships in the bay and moving toward the high ground. On this reconnaisance the General found a battery of Turkish pack artillery with a covering detachment of some twenty men in his area. Over their protests he informed them that they were now part of his command. Suddenly, about 7:30 AM, the New Zealanders, coming around a terrain obstacle known as the Pinnacle, appeared about 700 yards away. The General ordered the covering detachment to open fire on them. The New Zealanders took cover but did not return fire until some time later when a well-placed machine-gun fire was opened on the Turkish position from a more southerly direction. In the meantime the General had secured more troops by the simple expedient of assuming command of two infantry companies which the north-flank division (the 19th, commanded by Mustapha Kemal) of the Turkish forces had sent out as a flank covering force.

Returning again to the British side, we find that the fire of these small forces was described as coming from positions "bristling with rifles." At 8:00 AM the column commander reported that he could not advance without artillery support. In the meantime the troops waited and had breakfast. General Godley did not concur in the column commander's view of the situation and ordered an attack at 10:30, preceded by a 15-minute bombardment by artillery on the coast and on ships. When the attack was started the brigade commander employed only 5 companies although he had 4½ battalions available. But by this time two regiments of General Kannengieszer's division had arrived and gone into position so the attack was easily stopped. The British were never able to secure Djonc Bahir.

The author points out the following errors to show how mistakes of subordinates caused the well-conceived plan to fail. Poor estimation of the situation caused the brigade commander to credit the enemy with greater strength than he had and led to delaying the attack to such an extent that the Turks were able to bring up forces strong enough to defeat the final assault. There was no determination to push on, the brigades should have advanced without waiting for the flank battalion. A reconnaissance in force should have been made when the first fire was received, and finally the bulk of the available forces were not employed in the attack that eventually took place.

The remainder of the force, General Cox commanding, consisting of the 4th Australian and the 29th Indian Brigades, moved out, in one column, initially, at the same time as the New Zealanders. The plan called for turning east up a certain valley, and from there the Australians were to turn up a lesser draw to their objective, Kodjadschemen Dagh. The Indian Brigade was to continue on to Hill Q. Both objectives were to be reached by 3:00 AM and ample time was available for accomplishing the task.

The advance was guided by an officer and some of the Greeks previously referred to. Since the column had already lost some time it was decided to try out a short cut which the Greek guides reported existed. This trail was so narrow and difficult that the column, instead of gaining one-half hour as had been hoped, lost three more precious hours. The Australian Brigade then missed the turn-off point, and soon found itself with a flank covering detachment that had been sent farther to the north early in the evening. It is reported that the fact that the troops wore white arm bands and white cloths on their knapsacks is the only thing that prevented the covering force from firing on them. The Australians took up a position extending the covering force and stayed there about 2½ hours (until 6:30 AM), when General Cox directed them to advance on their original objective. The brigade commander argued that the troops were too spent to accomplish this task. General Cox revoked his order.

The Indian Brigade, which had followed the Australians, continued on up the main valley after the Australians turned away. The Brigade had been landed the day before and found the terrain most unfamiliar and difficult. Communication broke down, and it was not long before units became separated in small draws leading from the main valley. A Gurkha regiment finally wound up with the New Zealanders, a Sikh regiment with the Australians, and only the remaining Gurkha regiment, the 6th, under an energetic commander continued on toward the objective, getting to within 1,000 yards of it by 9:00 AM. Though they failed to seize their objective, the regiment did take a neighboring hill a few days later only to be forced out by the erroneously placed fire of their supporting artillery.

From the actions of these northern columns the author draws the lessons that it is an error to use short-cuts in night marches after suitable routes have been decided upon. Troops in unfamiliar terrain must be especially well provided with guides. A failure to push on vigorously, even though troops are tired and sleepy, generally results in greater losses in the end. In this case, for example, the next few days of battle cost 12,000 men and the objective was not attained. On the morning of the 7th, the British had only slightly more than two companies between themselves and the vital terrain, and at one stage only some nine members of a division staff.

American teachings are likewise to the effect that commanders must be constantly on the alert to guard against giving in to requests for delays because of the fatigue of troops in action. Yet everyone knows that pushing exhausted men against determined opposition is certain to cause tremendous losses, to jeopardize the success of the effort, and perhaps result in a catastrophe. The decision is bound to be a delicate one and must be based on a thorough knowledge of the capabilities of the forces and an accurate appraisal of the efforts they have already expended in the particular case at hand. For this reason it is probably impossible for outsiders to know, in many cases, when the commander failed to drive on what he could have. For the same reason it is idle to compare the accomplishments of one organization and to draw the conclusion that another should in a different situation, fight as many hours, march as many miles, or hold a given position as long as the first one. General Kannengieszer makes an interesting observation on this score. He attributes the British failure to press on to the fact that the troops had not had practice in continuing on to the point of exhaustion, and that the officers had not had training in gauging fatigue nor in pushing on in the face of disheartening evidences of misery. He points out that training of this sort was a regular feature in the German army and cites the Kaiser Maneuvers of 1912 as an illustration. He holds that peacetime training of this sort gave officers the knowledge of when and how to carry on in trying circumstances and gave the troops knowledge of their own capabilities and faith in their ability to push on. He declares that such training must be carried on in peace and war. It appears that the General's point is well taken. Is it a good idea to stop peacetime problems in the face of unfavorable weather? Should regular meal hours and rest periods be continued at such times? Are we inexperienced as the British were in 1915?

General Kannengieszer sums the thing up nicely when he says: "This demonstrates that an organization which is to be confronted with unusual tasks in time of war, must be prepared beforehand to meet them."

Aside from these major lessons, there are certain others which the General draws. He cites an instance in which the failure to synchronize the watches of the British infantry and supporting artillery resulted in delaying the assault long enough to give the Turks time to cite machine guns to beat it off. There were cases of orders becoming garbled in transmission, and mistakes in placing of artillery fire. These are dangers which beset all operations and against which we are, very properly, always warned to take the most careful precautions.

SURVEY OF THE DEFENSE POLICIES IN EASTERN EUROPE.
[Wehrpolitische Ubersicht über den osteuropäischen Raum.]

May 1939

ON THE NATURE OF THE SWISS SOLDIER.
[Vom Wesen des Schweizer Soldaten.] Edgar Schuhmacher

A dissertation on the psychological and moral development of the Swiss soldier. It is pointed out that self-reliance, devotion to duty, and love of country are emphasized in training.

Discipline of the highest order is developed because of the high average of intelligence of the soldier. This enables the inculcation of a cooperative spirit of pride and pleasure in service.

Little of the parade-ground type of training is employed. Emphasis is placed on field service and on the individual's fighting ability.

The author makes the point that it is the high quality of soldierly spirit and will to defend that has made a unified nation of the Swiss even though there is no solidarity of race or language in the nation.

An interesting article for consideration by those who are interested in the psychological aspects of military training.

OIL SUPPLY AND OIL POLITICS IN THE BRITISH EMPIRE.
[Erdölversorgung und Erdäolpolitik im Britischen Weltreich.] Dr. Fernau

An up-to-date discussion of the strategic importance of oil and the ramifications, political and financial, of the British oil companies.

There is an interesting section on the relations between the United States and Great Britain in the matter of oil. The rivalry between the great oil companies of the two countries is discussed and it is pointed out that the United States was an oil supply center for the British in the World War and may well be so in another emergency of that sort.

TANK SHIPS IN NAVAL WARFARE.
[Tankschiffe im Seekrieg.] Captain Waldeyer-Hartz, German Navy, Retired

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THE NEW REGULATIONS OF THE SYSTEM OF POLITICAL SUPERVISION IN THE RED FORCES.
[Zur Neuregelung des politischen Uberwachungssystems in der Roten Wehrmacht.] Dr. Reinhard Maurach

The author points out that although the 1936 Constitution of the U. S. S. R. envisages only defensive wars, the Bolshevist doctrine and training are quite to the contrary. The latter teaches that the proletariat forms the "shock troops of world revolution." The Red Army thus becomes the armed exponent of this idea and behind its attacking waves the flood of

revolution is to follow. The army, therefore, has a dual role to play — it must fight and it must bring a revolution. Hence political indoctrination is required.

Since the creation of the Red Army political commissars have been attached to the various units, even as small as a company, to oversee and to check this training. Their relations to the troops have varied in different periods of time.

In the first period, 1918 to 1929, their primary task was supervision of command echelons. The Revolution and the wars of intervention were fought under czarist officers. The political commissars were especially charged with watching the political actions of these officers and reporting on their political reliability. They were aided by the communist cells in the military units. There were also special Tcheka units for the army.

The czarist officers were soon almost entirely eliminated, but in the meantime, the establishment of state and collective farms and the end of the NEP brought about dissatisfaction and revolts among the masses, particularly among peasants who constituted about 80% of the army. Hence, in the second period, 1929 to 1937, the chief function of the political commissars was supervising the soldiers (as contrasted to the commanders).

In the third period, since 1937, their function is the supervision of all personnel and all activities in the service. This period was instituted when the dictatorship conceived a wide distrust of any and all persons of influence. It is illustrated in the various "purges." After the Tukachevski affair, it was not the untrustworthy officers alone, nor the dissatisfied peasants-in-uniform alone, but the army as such that was to be watched.

Currently, therefore, we find that a mass of laws and regulations have placed both the political commissar and the commander of a unit in positions of responsibility for both the political and military development and reliability of the unit. Political instruction, control of the party cells and of Komsomols within the unit, and liaison with higher communist party echelons are the special work of the commissar.

The fall of the chief of the Cheka signalled a growing mistrust in the political commissars, hence they and the military commanders have been given joint tasks and a joint responsibility. We would call it "setting a thief to catch a thief."

In time of peace such a dual system may serve to keep this "dangerous power," the army, in the "party line"— notwithstanding local mutinies such as the recent one in White Russia. In war, the author believes, the system is bound to result in failure.

MINOR CAUSES — MAJOR EFFECTS. BEGINNING OF THE AUGUST 1915 GALLIPOLI CAMPAIGN.
[Kleine Ursachen — grosze Wirkungen. Beginn der Augustschlacht 1915 auf Gallipoli.] (II) Major General Hans Kannengieszer Pascha

The author concludes his analysis of the operations of the British forces at Anzac and Suvla Bay beginning 6 August 1915, by discussing the landing and subsequent attacks — through 8 August — of the IX Army Corps. General Ian Hamilton's plan was given in the review of the April issue. The landing at Suvla Bay was the third major attempt of the British to gain decisive results at Gallipoli. Having gained the heights beyond the Anafarta Plain (see sketch) the troops were to pivot on Sari Bahir and swing to the south, thus cutting off the southern end of the peninsula and opening the entrance to the straits.

It is interesting to observe that in the course of his analysis of the plans for the British landing and the Turkish defense, General Kannengieszer applies principles very similar to those currently accepted in our army.

Based on the limited information available, the British Navy advised against a landing within Suvla Bay, and proposed a landing south of Small Kemikli point. General Hamilton therefore decided to land the IX Corps there at the same time as the advance from the Anzac position, described in the last issue, took place. The 11th Division was to start landing at 10 o'clock. It was to protect the beaches at once and then to advance around Salt Lake to the north (see sketch). From there part of the division was to turn south to take the hills in the Anafarta Plain east of the Lake, from the rear and flank, another part was to secure Kiretsch Tepe, and one brigade was to advance rapidly to take Tekke Tepe. The division consisted of 3 brigades of 4 battalions each. The 10th Division (consisting of 2 brigades), which would land about daybreak, was to advance on Great Anafarta and from there to cooperate with the 4th Australian Brigade which, it will be recalled, was advancing from Anzac to seize the highly important Kadjadschemen Dagh.

General Hamilton emphasized the need for speed and secrecy. General Stopford, who had just arrived from service in France, was placed in command of the Corps. He was pessimistic as to the ability of his troops to accomplish the assigned task and numerous conferences concerning the proposed operation were held. During these conferences it was decided to accede to the protestations of Stopford to the extent of landing one brigade within Suvla Bay and to employ the expression, "if possible" in the matter of taking the hills in the Anafarta Plain before daylight. Air photos of these hills were interpreted as showing these hills to be highly organized. As a matter of fact, the trenches were old and unrepaired and what little wire existed was rusted and ineffective. GHQ expected that early successes in the venture would alter Stopford's attitude.

The Turkish defenses against the proposed operation were under the command of Major Willmer Bey, a Bavarian Chevauleger. He had been in command since 18 June and had at his disposal 4 battalions of infantry, 2 field and 2 mountain batteries, 3 old field pieces without limbers, and weak detachments of cavalry and engineers. His task was to guard the coast from Edje Liman to the first streamline shown on sketch south of Salt Lake. Machine guns and barbed wire were too sorely needed at points considered more vulnerable to make any available to him. He was expected to guard 15 miles of coast line to delay any landings in force for from 36 to 48 hours. It is interesting to note that he made his dispositions in accord with our current doctrines. On the Kiretsch Tepe he placed his most trustworthy battalion, the Gallipoli Gendarmes, with three mountain guns attached. Its sector extended from Edje Liman to Great Kemikli. The Brussa Gendarme battalion and one mountain gun occupied Softa Tepe; it covered the east coast of Suvla Bay.

The 1st Battalion 31st Infantry occupied the hills just west of Salt Lake with outposts as far as Small Kemikli. It had two mountain guns.

The two batteries of field artillery and the three old guns were placed in position in the vicinity of Tekke Tepe from where they could cover the Plain up to the coast.

The 2d Battalion 32d Infantry was held in reserve in the vicinity of Turschunkoi. This battalion was taken from Major Willmer on 6 August and sent to defend the coast west of Sari Babir.

Willmer's plan called for the advance elements to fall back on their battalions and the force as a whole to make its final resistance on the ridge northwest of Great Anafarta. This position was being prepared by the engineers under the protection of the cavalry (some 30 dismounted riflemen) and two mountain guns. The CP was located just east of Great Anafarta.

While the Turks predicted a "great attack" as early as 3 August, the British plans were kept very secret and the landing was a surprise to the Turkish forces.

At 9:45 PM, Major Willmer at his CP, was informed of the landing south of Suvla Bay. He reported to GHQ and requested that his reserve battalion be returned to him. He did not get it.

The landing took place almost as it had been practiced on Lemnos. Four battalions landed dryshod (the British used a new type steel motor boat with a ramp at one end) at 10:00 PM. The 11th Division, less one of its three brigades, completed its landing, secured a line from Salt Lake southward to the coast, and seized Lala Baba where it emplaced its artillery. The third brigade which was to land along the northern coast of Suvla Bay encountered artillery and small arms fire when it approached the shore; furthermore, 3 cruisers anchored too far to the south. As a result two of the big landing boats struck shoals and the landing was seriously disorganized and delayed. The defending Brussa Gendarmes delivered a very effective fire on the troops landing on its front. This brigade was the one detailed to take Softa Tepe. Its landing was not completed until about 3:30 AM. When one battalion was finally pushed ahead to take the objective, it seized, by mistake, a small elevation in front of Softa Tepe.

Hence, daylight disclosed virtually the entire 11th Division massed on the strip of land between Salt Lake and the bay. Of its 12 battalions, 7 had made no contact with the enemy.

The landing of the 10th Division was subject to several changes in orders. The net result of which was that part of it landed near the Gahsi Baba and another part south of Small Kemikli. The latter, 5 battalions, was attached to the 11th Division by General Stopford. For the attack on the hills east of Salt Lake, the division ordered these battalions to take part in the advance around the lake which caused a mixing of units. Before much of an advance could be made, Softa Tepe had to be taken. In accordance with their plans the Turks withdrew when the British advanced and the hill was occupied by 8:40 AM, 7 August. The senior brigade commander ordered a halt and reported his action. There now resulted a series of orders, conferences, counter-orders, and misunderstandings which resulted in delaying the attack until 5:30 PM. The hills were finally taken by 7:00 PM. Turkish artillery fire prevented pursuit by the British of the withdrawing Turkish battalion. Contact with the enemy was lost.

By the same time part of the 10th Division had advanced about halfway up the coast toward Edje Liman.

The night passed quietly. Two brigades were withdrawn to the coast.

The next day, 8 August, advances on objectives, short of the final objective shown on sketch, were ordered after a council of brigade commanders had convinced the commander of the 11th Division that the troops needed rest. The commander of the forces advancing along the Kiretsch Tepe reported that he could not dislodge the "strong" (we know they consisted of 3 companies and some mountain guns) forces facing him without more artillery support.

The corps commander eventually ordered that attack be made on Tekke Tepe if it was found to be lightly held.

When General Hamilton heard of the inaction ashore, he decided to land to see what the situation actually was. Trouble with the sailors of his ship delayed him so that he did not land until 6:00 PM. The corps commander assured him that all was well and that the only things needed were rest and more artillery. He was strongly opposed to a night advance. The commander of the 11th Division also argued against a night advance. General Hamilton was ultimately able to have one brigade ordered to advance on Great Anafarta and to extract a promise that at least one battalion would be on Tekke Tepe by daylight of 9 August. These advances did not get under way until about 3:30 AM, 8 August, because messengers were delayed in finding the battalions and getting orders to them.

By this time, however, Turkish forces dispatched to the heights around the Plain, were already on their way from Bulair. The delay occasioned by the events mentioned above, enabled the Turks to reach the heights first and thus to rout the British advancing on the Tekke Tepe and Anafarta.

In citing the errors made in this phase of the operation, General Kannengieszer notes that some of them, as the reader has noted, were similar to those noted in the consideration of the actions of the 3 brigades which moved on Sahri Bahir.

His central theme is that a well-conceived plan is often, as here, ruined by poor performance of subordinates and this in turn is often due to what seem like little things.

One of the lessons he draws here is to repeat the point that commanders must push on vigorously even when troops are tired or a battalion or two has not yet joined the main body.

The importance, in joint army-navy operations, of accepting the advice of the navy in the selection of landing areas is stressed. The failure to do so at Suvla Bay proved to be costly.

The dangers of changing orders, mixing units, and changing their destinations (in this case landing areas) are emphasized. Had there been a mere repetition of the original orders for the use of the 11th Division early on 7 August instead of an attempt at modification and remodification thereof, the movement around Salt Lake would have been executed much earlier and at less cost.

The massing of troops on the narrow strip between the bay and the Lake is condemned on the scrore that the "Lake" was dry and that an advance on a broad front, instead of in massed columns, which were subjected to artillery fire, was feasible.

The General also cites the erroneous interpretation of air photos as a source of a grave error — sending the troops around Salt Lake to take non-existent "organized positions" in flank. The criticism should probably be for the failure to supplement air reconnaissance with ground reconnaissance.

In spite of all thsee failures the venture could still have succeeded if General Hamilton's ship had not had mechanical trouble on 8 August, or if the messengers of the brigade ordered to advance that evening had located the battalions and delivered the orders more expeditiously. Small causes often work great results indeed.

This article is worthy of study from the point of view of troop leading and from the training angle. It demonstrates the types of weaknesses that armies newly created in time of war are likely to display. The incidental discussions of tactical doctrine are also of interest. General Kannengieszer used the British "History of the Great War" as source material for his description of English plans and actions. Thus there is probably little that a student of this campaign can gain from that angle. But the interpretation of British actions and the descriptions of Turkish plans and reactions may well prove illuminating to the man who has an especial interest in Gallipoli.

SURVEY OF NATIONAL DEFENSE POLITICS IN WESTERN EUROPE. [Uberblick über den wehrpolitischen Raum Westeuropas.]

TANKS AND TANK TROOPS OF THE 66TH LIGHT TANKS ATTACKING THROUGH A SMOKE SCREEN DURING PLATTSBURG MANEUVERS, AUGUST 1939.

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LIST OF PERIODICALS INDEXED AND KEY TO ABBREVIATIONS

A Ord = Army Ordnance

A Quar = Army Quarterly (Great Britain)

Bul Belge Mil = Bulletin Belge des Sciences Militaires (Belgium)

Cav Jour = Cavalry Journal

Cav Jour [GB] = Cavalry Journal (Great Britain)

CA Jour = Coast Artillery Journal

FA Jour = Field Artillery Journal

Ftg Forc = Fighting Forces (Great Britain)

Jour Amer Mil Inst = Journal of the American Military Institute

Jour RAMC = Journal of the Royal Army Medical Corps (Great Britain)

Jour R Art = Journal of the Royal Artillery (Great Britain)

Jour RUSI = Journal of the Royal United Service Institution (Great Britain)

Jour USII = Journal of the United Service Institution of India (Great Britain — India)

Kras = Krasnaya Zvyezda (Russia)

MC Gaz = Marine Corps Gazette

Mil Mitt = Militärwissenschaftliche Mitteilungen (Austria)

Mil-Woch = Militär-Wochenblatt (Germany)

Mil Eng = Military Engineer

Mil Surg = Military Surgeon

Nav Inst Proc = Naval Institute Proceedings

Panzer = Panzertruppe (Germany)

Pion = Pionere (Germany)

QM Rev = Quartermaster Review

Ras Cul Mil = Rassegna di Cultura Militare (Italy)

Rv d'Art = Revue d'Artillerie (France)

Rv de Cav = Revue de Cavalerie (France)

Rv d'Inf = Revue d'Infanterie (France)

Rv Mil Suisse = Revue Militaire Suisse (Switzerland)

RAF Quar = Royal Air Force Quarterly (Great Britain)

US Rev = United Services Review (Great Britain)

Vet Bul = Veterinary Bulletin

Ws & Wr = Wissen und Wehr (Germany)

Jan = January
Feb = February
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The cost of unpreparedness. (Mil Eng — Sep-Oct 1939)

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Our present military position. (A Ord — Sep-Oct 1939)
Miscellaneous information. (Rv d'Art — Feb, Mar 1939)
Our new service rifle. (QM Rev — Sep-Oct 1939)

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Manassas maneuvers. (CA Jour — Sep-Oct 1939)

UNITY OF COMMAND

Japan and the answer. (US Rev — 7 Sep 1939)
Unity of command. (Mil-Woch — 20 Jan 1939)

V

VETERINARY SERVICE

Veterinary inspection for the Regular Army and the CCC. (Vet Bul — Jul 1939)
The sanitary control of milk supplies distant from the Laboratory. (Vet Bul — Jul 1939)
Inspection of dairy products. (Vet Bul — Jul 1939)

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WAR PEACE

The democracies prepare for war. (Mil Eng — Sep-Oct 1939)
The cost of unpreparedness. (Mil Eng — Sep-Oct 1939)

National defense programs of the great democracies. (Ws & Wr — Mar 1939)
Policy and the naval officer. (Nav Inst Proc — Oct 1939)
Economic preparations for war. (Rv Mil Suisse — Apr, May 1939)

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ANCIENT

The Battle on the Kopratas, 317 B.C. (Pion — May 1939)

ASIA

JAPAN-CHINA (1930-)

The struggle in the Far East. (Jour USII — Jul 1939)
Nankin and Shanghai at the outbreak of the Sino-Japanese War in 1937. (Jour RUSI — Aug 1939)
Japan's war within a war. (US Rev — 17 Aug 1939)
Guerrilla warfare and motorization. [See "Foreign Military Digests"]
Eighteen months of war in China (1937-1938). (Bul Belge Mil —Apr, May 1939)
Two years of war in China. (Kras — 22 Jun 1939)
The conflict in Eastern Asia. (Mil Mitt — Apr, Jun 1939)
The Japanese aircraft equipment and its employment in China. (Mil-Woch — 2 Dec 1938)
The conflict in the Far East. (Mil-Woch — 2 Dec 1938)
Guerrillas. (Rv d'Inf — May 1939)

EUROPE

SEVEN YEARS' WAR (1756-1763)

The men that fought at Minden. (Jour Amer Mil Inst—Summer 1939)
The cavalry of Frederick the Great. (Cav Jour [GB] — Oct 1939)

NAPOLEONIC WARS (1795-1815)

Amphibious operations — Lessons from the past. (Ftg Forc — Oct 1939)
The operative significance of the fortified Elb Line in the conduct of Napoleon's autumn campaign of 1813, as determined by modern observation. (Mil-Woch — 9 Dec 1938)
An amphibious campaign — North Holland, 1799. (A Quar — Oct 1939)

SPANISH CIVIL WAR (1936-1939)

Tank attack in Spain. (Cav Jour — Jul-Aug 1939)
Attack in Spain. (FA Jour — Jul-Aug 1939)
"Spanish War Theme." (Ftg Forc — Aug 1939)
Air Notes: Summary of "Les Enseignements Aériene de la Guerre d'Espagna." (RAF Quar — Oct 1939)
The Spanish Civil War. (Mil Mitt — May 1939)
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Baptism of fire of German tank troops before Madrid. (Panzer — Jul 1939)

UNITED STATES

CIVIL WAR (1861-1865)

A symposium on leadership. (FA Jour — Jul-Aug 1939)
I.—Early's Valley Campaign. (Ftg Forc — Aug 1939)
The fall of Richmond. Evacuation and occupation. (Jour Amer Mil Inst — Summer 1939)
Little Phil. (Inf Jour — Sep-Oct 1939)
"Damn the torpedoes . . . ?" (Nav Inst Proc — Oct 1939)

WORLD WAR (1914-1918)

E — General Military History

A portrait of the modern field army. (Ws & Wr — Apr 1939)
Minor causes — major effects. (Ws & Wr — Apr, May 1939)
With the Polish troops from Mayence to Varsovie. (Bul Belge Mil — Jun 1939)
French army command at the beginning of the war, 1914. (Mil-Woch — 20 Jan 1939)

G — Arms and Services

AIR ARM

Short survey of the employment of battle plane pilots in the World War. (Mil-Woch — 6 Jan 1939)

ARTILLERY

A 75-mm battery in the tempest (May 1918). (Rv d'Art — Mar 1939)

CAVALRY

The 4th Light Brigade from 30 July to 5 October 1914. (Rv de Cav — May-Jun 1939)

INFANTRY

Infantry scouts, horse or motorcycle? (Rv de Cav — May-Jun 1939)

TANKS

The first steps of the British tank — the battle of 15 September 1916. (Rv d'Inf — Apr, May 1939)
Reconnaissance and identification of tanks in combat. (Rv d'Inf — May 1939)

H — Military Conduct of the War in the Field

The 4th Light Brigade from 30 July to 5 October 1914. (Rv de Cav — May-Jun 1939)
Raids in Tranovo trench (vicinity of Reims), 3 January 1918. (Rv de Cav — May-Jun 1939)
Lagarde, the first major battle of the World War, 11 August 1914. (Ws & Wr — Mar 1939)
Minor causes — major effects. (Ws & Wr — Apr, May 1939)
The ever-changing application of the unchanging principles of war. [See "Original Military Study"]
The commander in modern warfare. [See "Foreign Military Digests"]
Molding men for battle. (Inf Jour — Sep-Oct 1939)
With a machine-gun section in the Flanders offensive. (Bul Belge Mil — Jun 1939)
The oil fields in the territory of the Galician and Rumanian war zone, 1914-1918. (Mil Mitt — Jun 1939)
Portraying the modern general. (Mil-Woch — 17 Feb 1939)
The Russian strategic problem in the World War. (Ras Cul Mil — Jun 1939)

J — Campaigns and Battles

AFRICAN AREA

Cameroons

Cameroons coast campaign. (MC Gaz — Sep 1939)

ASIATIC AREA — TURKISH THEATER

Dardanelles (Gallipoli) Front

Minor causes — major effects. (Ws & Wr — Apr, May 1939)
Kitchener and Gallipoli. (Inf Jour — Sep-Oct 1939)

EUROPEAN AREA — ITALIAN THEATER

Military history for troops. Initiative of a subordinate leader placed on his own responsibility. (Mil-Woch — 3 Feb 1939)
The war on glaciers — The combats in the Ortler Massif, 1914-1918. (Rv d'Inf — Apr 1939)

EUROPEAN AREA — RUSSIAN THEATER

Tannenberg. (Mil-Woch — 6, 13 Jan 1939)

EUROPEAN AREA — WESTERN THEATER

1914

The 4th Light Brigade from 30 July to 5 October 1914. (Rv de Cav — May-Jun 1939)
Infantry scouts, horse or motorcycle? (Rv de Cav — May-Jun 1939)
Lagarde, the first major battle of the World War, 11 August 1914. (Ws & Wr — Mar 1939)

1916

The first steps of the British tank — the battle of 15 September 1916. (Rv d'Inf — Apr, May 1939)

1918

Raid in Tranovo trench (vicinity of Reims), 3 January 1918. (Rv de Cav — May-Jun 1939)
A 75-mm battery in the tempest (May 1918). (Rv d'Art — Mar 1939)
With a machine-gun section in the Flanders offensive. (Bul Belge Mil — Jun 1939)

L — Naval History

Cameroons coast campaign. (MC Gaz — Sep 1939)
The crisis and turning point in submarine warfare during the World War. (Mil-Woch — 10, 17 Feb 1939)

EUROPEAN WAR (1939-)

The war in the air, September, 1939. (Ftg Forc — Oct 1939)
The war on land. (Ftg Forc — Oct 1939)
The war at sea. (Ftg Forc — Oct 1939)
Air fighting on the Eastern Front. (US Rev — 21 Sep 1939)
U-Boats as usual. But very different conditions today. (US Rev — 28 Sep 1939)
Military causes of the Polish defeat. [See "Foreign Military Digests"]
(See "The European War," page 25.)

WEAPONS

To keep the guns firing. (A Ord — Sep-Oct 1939)
Ordnance research. (A Ord — Sep-Oct 1939)
Remarks on the reconnaissance detachment. (Rv de Cav — May-Jun 1939)
Maneuvering a battalion of 155-mm guns (GPF). (Rv d'Art — Feb 1939)
Miscellaneous information. (Rv d'Art — Feb 1939)
Our new service rifle. (QM Rev — Sep-Oct 1939)
The German battalion in defensive action. (Kras — 5 Aug 1939)
Military causes of the Polish defeat. [See "Foreign Military Digests"]
Employment of antitank weapons on special missions. (Mil-Woch — 1 Jan 1939)
Organic antitank weapons or independent antitank units? (Mil-Woch — 27 Jan 1939)
The employment of mechanized forces. (Panzer — Jun 1939)
Renovation of French infantry armament. (Rv d'Inf — May 1939)
Does the rifle face a crisis? (Rv Mil Suisse — May 1939)

WITHDRAWAL

A woe-begotten child. (Mil-Woch — 6 Jan 1939)
No woe-begotten child. (Mil-Woch — 3 Feb 1939)

Y

YUGOSLAVIA

Through Yugoslavia to Athens by car. (RAF Quar — Oct 1939)

YUGOSLAVIA (ARMY OF)

The Yugoslavian Army. (Mil-Woch — 17 Feb 1939)

"A sword keeps another sword in its scabbard."
—(Old German proverb)

THE HOME OF THE GENERAL SERVICE SCHOOLS IN 1890
(The present Sherman Hall.)

HISTORY OF THE COMMAND AND GENERAL STAFF SCHOOL

★ ★ ★

PART IV

The regulations of 1888 marked an important forward step in the development of the instructional system at the Fort Leavenworth schools. By the introduction of a Department of Military Art, including a systematic course in tactics, the foundation was laid for gradual building up of a school for the comprehensive training of officers of the Army in the field duties connected with higher command and staff functions.

It seemed desirable to furnish a reward for those members of each class who excelled in their work, hence in 1890 the following order was issued providing for the annual designation of honor graduates:

HEADQUARTERS OF THE ARMY
ADJUTANT GENERAL'S OFFICE

WASHINGTON, *February 21, 1890.*

GENERAL ORDERS
No. 18

On the recommendation of the Major General Commanding the Army, the Secretary of War directs that the following orders be published for the government of all concerned:

Hereafter as soon as practicable after the close of the final examination of the classes of student officers undergoing instruction at the U. S. Artillery School and the U. S. Infantry and Cavalry School, the respective commandants will report in writing to the Adjutant General of the Army as follows:

* * * * * * *

2. The names of the three officers of the graduating class at the Infantry and Cavalry School who shall have most distinguished themselves by general proficiency in the prescribed courses of study, as determined by the general merit roll of the class made up by the staff of the school.

* * * * * * *

Hereafter, so long as any such graduate shall be borne upon the active or retired list of the Army, his name will appear in the Army Register in the "staff corps," "regimental," or "retired officers" list to which it properly belongs, followed by the words "Honor Graduate of the Artillery School, 18__," or "Honor Graduate of the Infantry and Cavalry School, 18__," as the case may be.

BY COMMAND OF GENERAL SCHOFIELD:

J. C. SHELTON,
Adjutant General.

An event of considerable importance and stimulus to the school was its transfer on October 20, 1890, to new quarters in the building which was initially occupied as the main building of the Ordnance Arsenal and later by Headquarters of the Department of Missouri. The removal of Department Headquarters to St. Louis made it available for the school which had outgrown its quarters in the old academic building. In reply to a letter from the school, General Sherman cordially consented to the designation of the new academic building as "Sherman Hall."

In 1891, another revision of the school regulations and the course of study took place and was published in General Orders No. 83, W.D., October 12, 1891.

The changes in the school regulations and programme of instruction made in this revision were only slight. It is noted that final examinations appeared to have grown in favor, for their weight in determining the final order of merit of the class was now increased from one-third to one-half of the term marks.

In the Department of Military Art, a new section called "Exercises in Application" was added which consisted in student preparation of essays upon military topics and studies of campaigns. In the Department of Engineering a section in "Building Superintendence" was added. In the Department of Infantry a new section specialized in "Infantry fire tactics." The course in Military Hygiene was given recognition as one of the coordinate departments of the school.

The annual report of the school for 1890 indicates that a considerable proportion of the instruction in military art consisted in practical exercises.

Although the course of instruction was somewhat elementary, it constituted a distinct effort to widen the scope of the school course and to change the school from an elementary to a post-graduate institution. In order to place all members of the class on about the same basis as to fundamental preparation, those who desired to follow a preliminary course of mathematics were, in 1892, invited to report in advance for a preliminary course. By the establishment of post lyceums during this year, some of the preliminary instruction work was taken from Fort Leavenworth. In the same year, by the abolition of the daily marking system the recitations were changed to the more grown-up system of conferences led by the instructors and participated in by the students and used as a basis of later practical tests.

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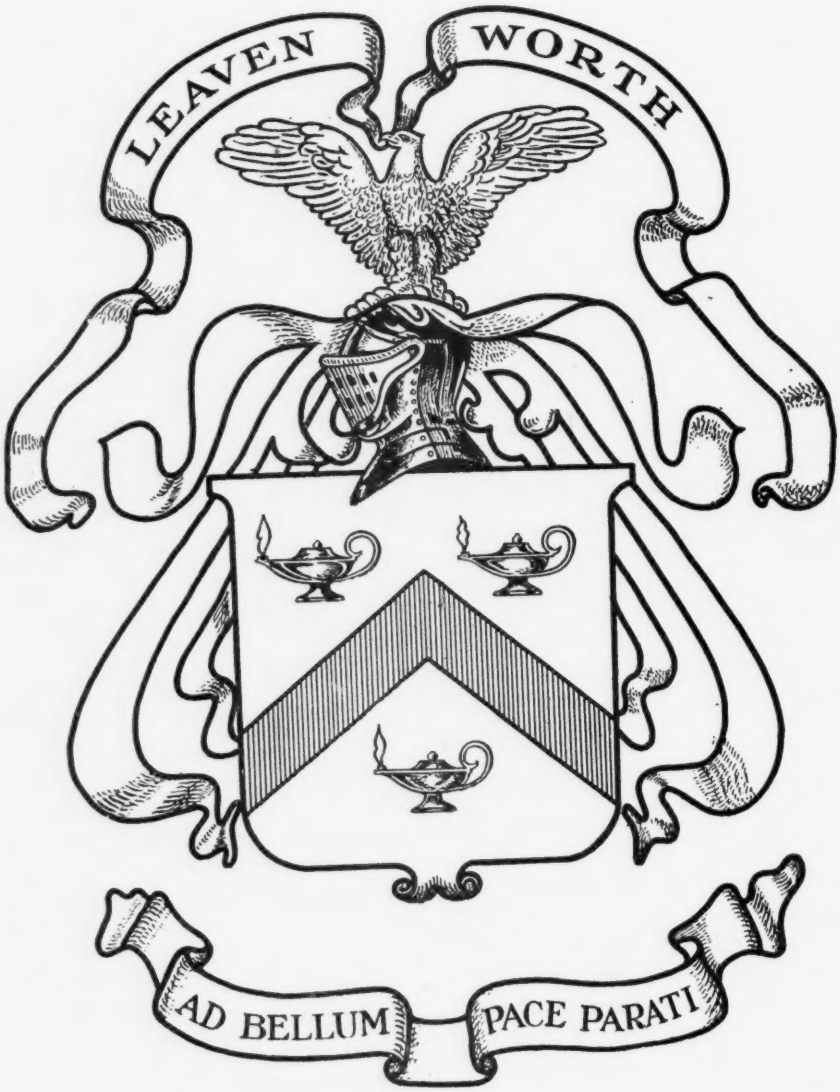
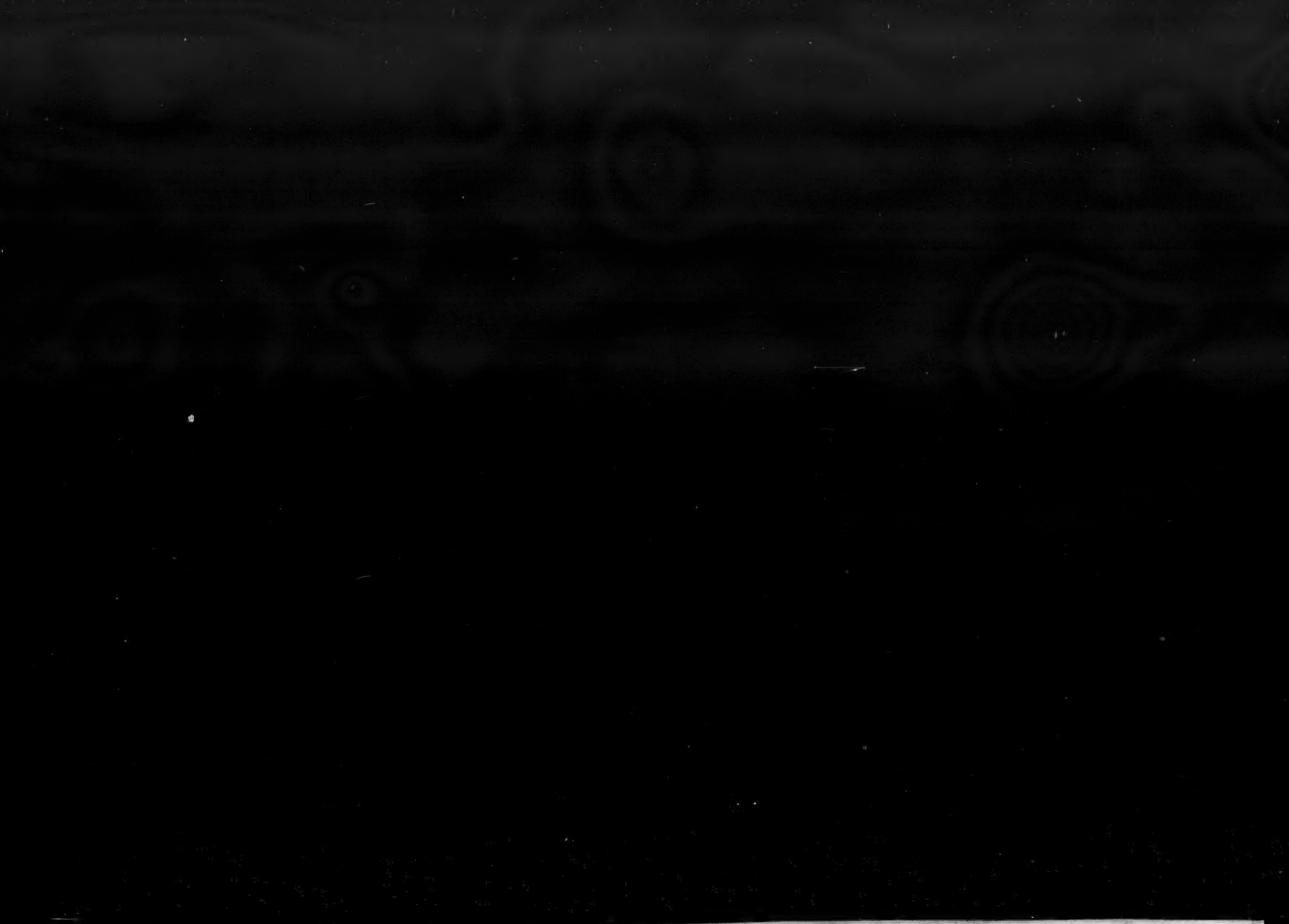
(To be continued)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